

THE FRUIT WORLD

"Market & Grower"

ESTABLISHED 38 YEARS.

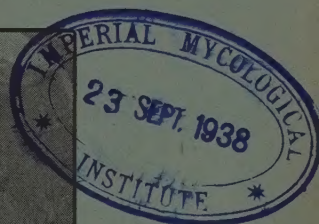
Circulates to Growers of Dried, Canned, Deciduous, and Citrus Fruits, Market Gardeners, etc.
Throughout Australia, New Zealand and abroad.

TELEPHONE NUMBERS: MELBOURNE, F 2656; SYDNEY, M 6751.

Vol. XXXIX. No. 8

AUGUST 5th, 1938

Price 6d.



Tractor Ploughing in the Orchard.

RIGHT
and
LEFT HAND TURN

The "LIGHTNING" OFFSET - DISC - CULTIVATOR (TRACTOR)

RIGHT
and
LEFT OFFSET

The old type of Offset Disc Cultivator will only turn one way—BUT the "LIGHTNING" turns BOTH WAYS (Right and Left) and TURNS BETTER to the RIGHT THAN OTHERS TURN to the LEFT!

The Automatic Right and Left Turn is an exceptional feature — properly designed and absolutely foolproof. It is mechanical and does not require any levers — or gadgets of any kind. THE ANGLE OF CUT CAN BE SET TO SUIT ANY CONDITION — and the Tractor pulls the cut on POSITIVELY and INSTANTANEOUSLY.

No Framework above the discs. Strong Frame, 20in. Discs.
Long & Big Bearings with Steel Shims.

The "LIGHTNING" is the Finest Offset on the Market
Write for Further Particulars.

Other "LIGHTNING" Specialised Implements are—
Tractor and Horse Drawn —
Disc and Mouldboard Plows —
Strip Plows — Citrus — Extended Disc — Spring and Rigid Tyne — One and Two Way Disc Cultivators, etc.

Also "LIGHTNING" Packing House Equipment—
As supplied to the Leading Packing Houses — Washing — Sterilising — Drying — Polishing Outfits — Citrus, Apple and Lemon Sizers — Dehydrators — Lidding Presses, etc.

The "LIGHTNING" Fruit Grader Co.

517 Albion St., West Brunswick, N.12, Melbourne, Victoria Agents in All States

Phone FW 4181
(2 Lines)

"To Choose the Best is Wisdom"

Blyth's "BLUE BELL" Quality Sprays

MADE IN AUSTRALIA

For Twenty-five Years "BLUE BELL" Arsenate of Lead has Proved a Faithful Friend to Growers.

Extract from "Better Fruit" (U.S.A.), Spraying and Pest Control Edition, February, 1937.

CODLIN MOTH CONTROL

By Arthur D. Borden, University of California.

"LEAD ARSENATE is our standard spray material to-day.

None of the many substitutes which have been tested have proved to be as toxic and effective in control."

Arsenate of Lead (Paste or Powder), Lime Sulphur, Special Copper Mixture (Fungicide), Spray Spreader, White Oil, Nicotine Sulphate, Red Oil, etc.

Blyth Chemicals Ltd.**31 Queen Street - Melbourne**

Phone Cent. 756

INTERSTATE AGENTS—

Tasmania: W. D. Peacock & Co. Ltd., Princess Wharf, Hobart. H. Jones & Co. Ltd., Charles St., Launceston.
New South Wales: Lanes Ltd., 69 Abercrombie St., Sydney.
Queensland: A.C.F. and Shirleys Fertilizers Ltd., Brisbane.South Australia: George Wills & Co. Ltd., Gilbert House, Gilbert Place, Adelaide.
Western Australia: F. H. Faulding & Co. Ltd., 313 Murray Street, Perth.

Works: PRAHRAN GROVE, ELSTERNWICK, VICTORIA

L 1468.

BENDER & CO. PTY. LTD.

100 Elizabeth Street, Launceston

P.O. Box 394
Launceston

And at Huonville

Telegrams & Cables "Benco"

Shipping Agents - Cool Storage Proprietors - Fruit Exporters

(Accommodation 25,000 Cases)

Agents for Cooper's Famous Sprays.

Direct Importers of Apple Wrapping Paper, Pine Cases, Etc.

WE WANT TO:

Supply your Orchard Requisites.

Assist in Marketing your Crop.

Nitrogen in the Spring

Quick - Acting Fertilisers Most Valuable

A VERY thoughtful orchardist and market gardener realises that he must pay particular attention to his crops during the early Spring period if the maximum potential production is to be obtained. Careful attention must be paid to cultivation to keep the soil in good tilth and to promote the activity of beneficial soil micro-organisms. A well-planned fertiliser programme must also be adopted to maintain soil fertility at a high level, and to ensure that there is an abundant supply of plant food materials present to satisfy plant requirements during the period of young growth.

In both fruit and vegetable production the main nutrient requirement of the plants at this time of the year is nitrogen in a readily available form. Nitrogen is the vital plant food which governs growth and vegetative development, and as the soil is normally low in this constituent at the end of the Winter months it is imperative that action should be taken to rectify this natural deficiency of such an important plant food.

The use of nitrogenous fertilisers has thus become a general practice during the Spring and early Summer months in practically all fruit and vegetable growing districts, and more and more growers are becoming convinced of the value of quick-acting fertilisers such as Chilean granulated nitrate of soda.

The use of this type of fertiliser ensures that your crops are given a good start and, at the same time,

safeguarded against the possibility of receiving a check in growth in the critical early stages.

All fruit trees require an abundance of readily available nitrogen in the Spring to promote blossoming and vigorous new growth and to ensure that the maximum setting of fruit is obtained. Citrus trees should receive an annual dressing of $\frac{3}{4}$ lb. Chilean Granulated Nitrate of Soda for each year of the tree's age up to a maximum dressing of about 12 lbs. in the case of old trees. Thus, an eight-year-old tree should receive 6 lbs. of nitrate of soda and a twelve-year-old tree about 9 lbs. About two-thirds of this dressing should be given just prior to blossoming and the remainder several months later. The fertiliser should not be placed close to the butt of the tree, but be spread out well beyond the outer fringe of foliage and well worked into the soil with the cultivator.

Used in combination with superphosphate, a quick-acting nitrogenous fertiliser will also give excellent results with all types of pome and stone fruits. From 3 to 5 lbs. of nitrate of soda mixed with smaller quantities of superphosphate or super, and potash should be given to each tree of medium size several weeks prior to blossoming.

Green vegetables, such as Cabbage, Lettuce, Cauliflower, Spinach and Celery, respond very markedly to dressings of nitrate of soda, as it promotes a vigorous growth of crisp, succulent foliage, which is a most desirable characteristic for this class of vegetable. It is also very beneficial to other vegetables such as Tomatoes, as it increases yield and improves the quality of the fruit.

Chilean Nitrate of Soda is particularly useful in the Spring, when the soil is cold, as it is very quick in its action and will frequently give a response much more rapidly than other nitrogenous fertilisers. Its alkaline or non-acid nature renders it extremely valuable on soils which are naturally acid in reaction, whilst its manufacture in the form of snow-white granules or pellets makes it an excellent fertiliser to handle, and it is readily and evenly distributed either by hand or mechanical means.

FERTILISER SUBSIDY.

Can Now be Claimed.

UNDER LEGISLATION passed by the Commonwealth Parliament during 1937, a subsidy at the rate of 10/- a ton, upon a maximum quantity of 20 tons used by each primary producer, is payable to primary producers who used fertiliser during the 12 months' ending June 30, 1938, in the production of primary produce other than wheat. A similar subsidy is payable to approved organisations which supplied fertiliser without charge to primary producers, either for experimental purposes or as a measure of relief in cases of distress.

Applications for the subsidy in Victoria must be lodged with the secretary, Department of Commerce, 419 Collins-street, Melbourne, on or before January 31, 1939, on forms which are available at post offices.

RESEARCH INTO 53 VARIETIES.

U.S.A. Keeps Standard Up.

IN A RECENT REPORT by the Chief of the Bureau of Agricultural Economics, United States Department of Agriculture, it is stated that the buying and selling of fresh fruit and vegetables, on the basis of standard grades worked out by the Bureau, has become established trade practice.

The grades are used also by the Agricultural Adjustment Administrations in its marketing agreements with producers and shippers, and by the Federal Surplus Commodities Corporation in its purchases of food products for relief distribution. Continuing research seeks to improve the standards, which now cover 53 different fresh fruits and vegetables. During the year a number of the standards were revised, and investigations started on standards for additional products.

The Bureau, it is stated, maintains an inspection service at produce-shipping points the country over, where persons using the standard grades may have the quality of their products certified by the Government. Similar service is available in consuming markets. More than 400,000 cars of fruits and vegetables were so inspected during the year. Many shippers who do not have certified inspection also use the standard grades—a much desired practice, it is said, provided the grading is properly done. For the purpose of handling situations where the quality of products is other than that indicated by the markings on packages, the Secretary of Agriculture last January designated the Bureau's inspectors as inspectors under the Food and Drugs Act.

ANNUAL SUBSCRIPTION
WITHIN THE
COMMONWEALTH AND
NEW ZEALAND,
6/-, Post Free.
Including "Fruit World Annual,"
7/6 per annum.
SIXPENCE PER COPY.
OVERSEAS, 8/6, Post Free.
(Including "Annual," 10/- per an.)

THE FRUIT WORLD & MARKET GROWER

A Monthly Newspaper published in the interests of the Berry Growers, Deciduous, Citrus, Dried and Canned Fruitgrowers, and Market Gardeners.

— by the —

8-10 ORR STREET,
(Off 78 VICTORIA ST.)
MELBOURNE.

FRUIT WORLD PTY. LTD.

(Members of the Australian Monthly Newspapers' Association)

Box 1944, G.P.O. - - Phone: F 2656 (2 lines).

AN EXCELLENT
ADVERTISING MEDIUM
BECAUSE OF ITS WIDE
AND COMPLETE
CIRCULATION.

ADVERTISING RATES ON
APPLICATION.

439 KENT STREET,
SYDNEY.

Phone: M 6751 (3 lines).

Contents

Illustrations.			
Functions of the Bark (3 illus.)	5, 6	Fruit Tree Planting	14
Lightning Grader at Leeton Co-op. Cannery	9	Fruit Tree Studies	5, 6
Mr. W. J. Bishop	19	Manuring of Fruit Crops	7-9
Wilson's Wonder Walnut Tree	21	Market Grower	17, 18
Tasmanian Orchard Scenes (2 illus.)	23	Market Notes and Prices	33
		Mid-Murray Notes	21
		News of the Month	3
		New South Wales	11-13
		Nitrogen in the Spring	2
		Obituary	3
		Orchard Notes	33
		Overseas Fruit Crops	31
		Personal	3
		Pig Pen	35
		Poultry Notes	35
		South Australian News and Notes	19-22
		Strawberry Diseases	9
		Tasmania	23
		Victorian News and Notes	4, 10
		Windbreaks for Orchards	36
Subjects.			
Apple and Pear Exports, 1938	31		
Apple Publicity	10		
Apples in England	29		
Bark, Functions of the	5, 6		
Canned Fruit News and Notes	15, 16		
Citrus Notes	25, 26		
Cold Storage in New Zealand	32		
Dried Fruits News and Notes	26		
Export and Commercial News	29-31		
Fruit Juices, Production of	27		

Index to Advertisers

	Page		Page
Adelaide Fruit Merchants	34	Lilydale Tile Works	28
Bingham, D. W. & Co. Pty. Ltd.	33	Margetson & Co. Ltd.	33
Blyth Chemicals Ltd.	2	Melbourne Fruit Merchants	30
Brisbane Fruit Merchants	32	Metters Ltd.	18
British Mushroom Industry	10	McLean, N. N., Pty. Ltd.	17
Brookes Lemos Ltd.	6	Monro, Geo. Ltd.	12
Bulman, Jas. & Sons	22	Neptune Oil Co. Ltd.	4
Brunning, John & Sons	6	Nightingale, A. G., & Co.	28
Chilean Nitrate	18	Nitrogen Fertilisers	16
Clensel Products Pty. Ltd.	18, 22	Nobelius, C. A., & Sons Pty. Ltd.	13
Commonwealth Bank	48	Pacific Potash Ltd.	12
Davis Gelatine	10	Pestend	17
Electrolytic Refining & Smelting Co. of Aust. Ltd.	6	Preston Motors Pty. Ltd.	24
Excelsior Supply Co.	20	Producers' Co-op. Dist. Society	30
F. & M.G. Society	19	Quick Manufacturing Co.	14
Gerrard Wire Tying Machines Co. Pty. Ltd.	11, 27	Ronaldson-Tippett	25
Goodman, C. J.	4	Rosen, L. P., & Son	26
Hillman & Keogh	6	Rotary Hoe Cultivator Ltd.	22
Howard, R. G., & Co.	20	Royal Melbourne Show	20
Hull, Port of	33	Russell & Co.	7
International Harvester Co. of Aust. Pty. Ltd.	14	Southampton, Port of	29
Jaques Pty. Ltd.	5	Sydney Fruit Merchants	31
Jones, H., & Co. Ltd.	34	Trewhella Bros. Pty. Ltd.	26
Karrybetta Fruit Trays and Cases	23	U'Ren, Geo. A.	26
Koerner, F. G., & Co. Ltd.	21	Vacuum Oil Co. Pty. Ltd.	8
Leggo & Farmers, Victor Ltd.	7, 8	Werner, R., & Co. Pty. Ltd.	36
Lightning Fruit Grader Co.		Wholesale Fruit Merchants' Association of Victoria	35
Cover 1. and 10		Wicks, H. N.	20
		Wilson, Herbert, Pty. Ltd.	33
		Wonga Spray Pump	28

News of the Month OTTAWA AGREEMENTS

From information furnished by British and Australian Governments it would appear that the Ottawa Agreements are to stand for the present. In the meantime, the national and trade policies of Australia and Great Britain are to be re-examined. Summed up, it would appear that Britain desires a more active migration policy with British nationals for the development (and doubtless the defence) of Australia, together with an understanding which would give the British manufacturer a better opportunity of competing in the Australian market. The principle of Australia developing her own secondary industries is fully recognised. It is proposed to set up a Committee of Enquiry—doubtless as to whether some Australian industries are being conducted on an economic basis. It appears to be fully recognised that Great Britain is the principal market for the export of Australian primary products.

The various interests concerned are studying these and other aspects with the liveliest interest, and it is certain that any subsequent decisions made will be in the light of tangible evidence. There are wider implications (including defence and long-range policy) than can be discussed in these columns. However, readers are invited to express their views.

Naturally, the Australian canned fruit interests will be disappointed at not securing the larger measure of preference which they have so earnestly sought. The views of the delegates on their return will be of constructive service.

As regards Apples and Pears, it would thus appear that the existing arrangements stand—Empire Apples and Pears having preference of 4/6 per cwt. against similar foreign pro-

ducts in the United Kingdom markets.

Here again the question of a proposed closed period for Empire Apples and Pears during our marketing period, it is presumed, is not to apply for the present.

During the discussion in London between the Australian and British delegates, references were made to the Empire Producers' Conference held recently in Sydney, the point being stressed as to the development of agriculture in Britain, the British markets being understood in order of preference to belong to (1) British producers (2) Empire; (3) Foreign.

While no agreement was reached with U.S.A. on the question of the mutually supplying of the British market with Apples, it is pleasing to observe that U.S.A. growers have firmly adopted the policy of educational propaganda, thus bringing about a substantially increased consumption of Apples within their own borders, thus relieving the pressure on export.

If there is one lesson above all others to be taken to heart it is this, that a sturdy spirit of national self-confidence must increase in Australia, and with this, particularly as regards Apples—a determination to increase local consumption in order to provide against any possibility of shrinkage in the export trade.

In this connection fruitgrowers have behind them the full weight of reports of Nutrition Committees here and all over the world. Much is heard these days regarding national fitness. There are many aspects of this subject, but one thing is clear and unmistakable, viz., our people are not consuming enough fruit for normal health. It is the fruitgrowers' job to punch this home to the consumer and thus stabilise the industry.

BOOK REVIEWS.

We have received from the publishers the 1938 "Official Year Book" of the Fruitgrowers' Federation of N.S.W. From the introduction by Mr. Hugh Main, Minister for Agriculture, and a foreword by Mr. Jas. Heane, President, through many sections of interest to fruitgrowers, the little volume carries much information of a practical nature. Some of the chapters noted include a register of processors of fruit in that State, statistics concerning fruitgrowing in N.S.W., Departmental regulations, hints on fruitgrowing, fruit pests, legal information, and concludes with some pages on spraying. It is a most instructive booklet.

OBITUARY.

The death occurred at Gosford (N.S.W.) in July of Mr. Ernest W. Williams, a committeeman of the Gosford District Agricultural and Citrus Association. Deceased, who was 51 years of age, had lived at Gosford for 49 years.

PERSONAL.

Mr. J. R. Abel, fruitgrower, of Lilydale, Tasmania, and a member of the Tasmanian State Fruit Board, is leaving for a holiday and business visit to Java, Singapore and Penang by the S.S. "Nieuw Holland" on August 22. He is expected back in Sydney on October 9.

Southern Victorian Fruitgrowers' Association

THE annual meeting of the Southern (Victoria) Fruitgrowers' Association, was held at Box Hill on July 7. There was a large attendance. Mr. F. G. Beet presided. The meeting was officially opened by Mrs. Weber, M.L.A., who heartily commended the successful Apple Week effort and stated that a Ladies' Auxiliary would strengthen the Southern Fruitgrowers' Association.

Mr. J. B. Mills, President, Apple and Pear Council, stated that growers had it in their own hands to stabilise the industry by means of educational propaganda to increase consumption. Statistics showed that the average production of Apples in Australia over the past five years, was under 10 million bushels, and, after providing for export, there were about six million bushels to be sold in Australia. The markets with which growers in Victoria, Tasmania, New South Wales and Queensland were concerned, were those of Sydney, Melbourne and Brisbane. If Victorian growers sold their Apples for 5/6 a case on

the local market and 8/- a case for interstate markets, this would allow the retailer to make a profit of 33 per cent., and Apples could be re-tailed to the public at 3d. per lb. Despite comments which were frequently heard concerning the Queen Victoria Markets, the fact remained that the markets were in existence and would continue to exist for a considerable time. Growers had to face up to the facts. The fraction of 1d. per case levy would yield £10,000 to £12,000, which would be sufficient for educational publicity to substantially increase Apple consumption and completely uplift the industry. The remedy was in the hands of the growers themselves. The great results achieved by Apple Week had shown what was possible. A hearty vote of thanks was conveyed to the speaker.

Marketing Hours: The question of opening hours at the Victoria Market was debated at length. The present fixed hours for the opening of the market are: Monday, Wednesday and Friday, 6 a.m.; Tuesday and Thurs-

day, 5 a.m., and Saturday, 4 a.m. The City Council has been requested by the Transport Board Union to make the opening hour later, and suggested that the hours should be 6 a.m. on Saturdays and 7 a.m. on other days.

There was quite a difference of opinion on the question of marketing hours, among a large number of organisations interested in the market. It was decided by a large majority that the hours should remain as at present for the next twelve months. An amendment that the hours should be 6 a.m. from Monday to Friday, and 5 a.m. on Saturdays was defeated.

Neglected Orchards: Complaints were made that no action had been taken against neglected and abandoned orchards, which were a great menace in breeding and spreading diseases. Mr. J. M. Ward (Superintendent of Horticulture) stated that departmental officers were handicapped because under the Act their powers were limited in this direction.

The following resolutions were passed:—

"That the Government be asked to amend the Vegetable and Vine Diseases Act to give the Department of Agriculture power to control neglected orchards and fruit trees."

"That the Government be urged to introduce legislation to give the Department of Agriculture closer control over sprays and spraying materials offered for sale."

"That the Government should establish an experimental orchard in a southern district."

The following officers were elected: President: Mr. E. Noonan (Doncaster). Executive: Councillor G. T. Knee (Doncaster), and Messrs. M. Brown and F. G. Beet (East Burwood), T. Harrington and G. G. Miller (Diamond Creek), L. A. Webb (Doncaster), L. Pepperell (Mount Waverley), and S. Hardwick and F. J. Mullins (Geelong). Two retiring members of the executive: Messrs. W. A. Thiele and O. White (Doncaster) were thanked for their excellent services. The Secretary is Mr. J. W. Aspinall, Box Hill.

NORTHERN FRUITGROWERS' ASSOCIATION.

At a meeting of the Northern Victoria Fruitgrowers' Association, held at Kyabram on Friday, July 8, Mr. W. Young, who is at present with the Trade Delegation in London, was re-elected President. The following office-bearers were elected: Vice-President, Mr. J. G. B. McDonald, M.L.A.; Secretary and Treasurer, Mr. S. P. Cornish (Ardmona); Executive, Messrs. W. F. Cooper (Lancaster), J. G. B. McDonald, M.L.A., and S. P. Cornish; Dried Tree Fruits Committee, Messrs. D. T. Barry-Wood (Tongala), J. M. Sinclair (Bamawm), W. E. Cooper (Lancaster), N. Fairless (Shepparton); Fresh Fruits Committee, Messrs. S. Youlden (Merri-gum), F. Clayton (Kyabram), R. Lees (Shepparton).

The proposed Export Control Bill for Apples and Pears was fully discussed, also the question of drainage rates. The Association has decided to ask the Minister for the Interior, Mr. J. McEwen, M.H.R., to meet them and to discuss the new law regarding National Insurance.

The matter of a new agreement with S. J. Perry & Co. concerning the export of late Pears was deferred until the return of Cr. A. W. Fairley from abroad.

Mr. Cornish, the Secretary, submitted the annual report, which included such items as Fruit Industry Sugar Concession and Imperial Preference—Mr. Fairley, Mr. Adams and Mr. Young being in London to represent the Association. Nothing definite with regard to Imperial Preference can be done until the British Government finish their discussions with U.S.A. A duty against foreign fruits entering Britain on a weight basis of 7/6 per cwt. is now being asked for. The Tatura Research Station was another subject dealt with in the annual report. The Goulburn Valley growers hope that the establishment of this station will lead to an improved irrigation technique throughout the area.

Export Pears, water charges, and dried tree fruits were other items dealt with in the report.

As Spraying is a Necessity —then use the World's Best—

NEPTUNE SPRAYS...

The better quality of NEPTUNE Sprays is always obvious by comparison with others. NEPTUNE Sprays conform to the highest standards, and they are consistently uniform in strength and quality. Successful orchardists recommend them. Try them yourself and prove that they're better!

NEPTUNE PREPARED RED
SPRAYING OIL
(“A,” “C,” or Heavy Base)

NEPTUNE PALSOL
(Prepared Pale Oil)

NEPTUNE CLARIFOL
(Winter White Oil)

NEPTUNE WHITE SPRAY-
ING OIL (Summer Spray.)

NEPTUNE LIME SULPHUR
SOLUTION
(Clear, amber-coloured, free
from sludge)

GENUINE MACCLESFIELD
BLUESTONE

CHEMICAL SULPHUR
(23871)

BERGER'S ARSENATE
(Powder or Paste)

COLLOIDAL LEAD
ARSENATE

ENGLISH BLUESTONE
SNOW

GENUINE BLACK
LEAF 40

NEPTUNE LIME
POWDERED SULPHUR

COPPER SPRAY

NEPTUNE SPRAY
SPREADER



NEPTUNE OIL CO. PTY. LTD.

(INCORPORATED IN N.S.W.) ALL TRADES

GOODMAN'S FRUIT TREES

FINEST quality trees still available in all leading varieties: Apples, Pears, Cherries, Peaches, Plums, etc. Catalogue free. Goodman's trees are:—Prolific bearers of first-quality fruit.

Strong, healthy, well-grown. True to name. Guaranteed pest-free. Expertly packed for despatch any distance.

C. J. GOODMAN
Picnic Point Nurseries,
Bairnsdale, Victoria.

Fruit Tree Studies

THE FUNCTIONS OF THE BARK

Beneficial Effects of Spraying with Red Oil

THE BARK OF A FRUIT TREE plays an ever so much more important part in the growth and economic usefulness of a tree than many growers realise, state the Vacuum Oil Co. Pty. Ltd., in the valuable booklet, "Lungs and Laboratories." Continuing, the authors state: To paraphrase Mark Twain's remark about the weather, "Everybody talks about it but nobody seems to do anything about it!" Actually the bark's functions rank equal in importance with those of the leaves. Because this part of the tree is exceedingly complex in its structure, we will avoid long-winded technical explanation and call all that part which you can peel off the wood, simply—bark. Of course, there are several layers within the bark (illustrated below). They can be seen with the naked eye—most of them. Plant physiologists refer to them as phloem or bast, cortex, cork—but phloem is Greek; bast is Anglo-Saxon; cortex is Latin; and cork is Spanish—for bark! So it is all bark. But sandwiched between it and the

wood is a layer of vitally active cells completely encircling the tree called the Cambium. Early investigators thought that this sappy layer "turned into" wood, but we know now that it is living tissue wherein resides the life principle itself. Cambium builds the tree! On its inner side the cambium builds successive yearly layers of wood thus maintaining its position on the outside of the wood. This annual building process produces the well-known rings of growth in a tree from which it is possible to determine or verify historical events and the age of most trees—though not all.

A great deal of study has been applied to tree rings and Wm. Somerville, K.B.E., M.A., D.Sc., in his work on the subject, quotes two investigators, Sachs and Hartig, who evolved theories as to the difference between the Spring and Autumn zones of cells in tree rings. According to Sachs the difference in the character of these two zones is entirely the result of differences in pressure exerted by the outer bark upon the storage and growth tissues during the growing

season. Hartig expresses his opinion that the differences are due to lack of formative material at the disposal of the cambium in the Spring, during which period, as Murmeek found it is producing new shoots, and leaves, and particularly fruits. When this work is completed, Hartig continues, more food materials are available for the cambium to build up more wood cells than was possible in the Spring. Somerville states his conclusion that perhaps the correct explanation may be sought partly in Sach's theory and partly in Hartig's.

The importance of this investigation to us lies in the expression of the opinion by this internationally famous botanist that the bark exerts pressure upon the living, growth-producing cells of the cambium. The outer portion of the bark is dead tissue. It is dry, tough—in a word, it is cork. It encases the tree with a non-elastic sheath. Not until it is cracked and split can the trees resume its normal growth process and increase in size. The differences in the zones of tree rings give support to this view. While this may be accepted as true of normal healthy trees living in a natural environment, what of the average fruit tree?

The majority of fruit trees exist in a most unnatural environment, in which many factors combine to increase the inertia of the outer cork sheath of the bark, to harden it and increase its constrictive action on the functioning of the delicate underlying tissues. In universal orchard practice many fungicides and insecticides are used and sprayed copiously upon the bark; amongst others, arsenate of lead, lime, sulphur, nicotine sulphate, metallic salts such as copper and iron sulphates, tar distillates, soda—and all these reagents have an astringent, toughening action on the outer layer. In addition, the ravages of insects and the climatic conditions of a country to which the trees are not indigenous all play a part. Undoubtedly these things are upsetting some of the physiological functions, particularly nutritional, of many trees in Australia.

To quote Professor Henry Drummond, "A change in the surroundings of any plant can so react upon it as to cause it to change. By the attempt, conscious or unconscious, to adjust itself to the new conditions, a true physiological change is gradually wrought within the organism."

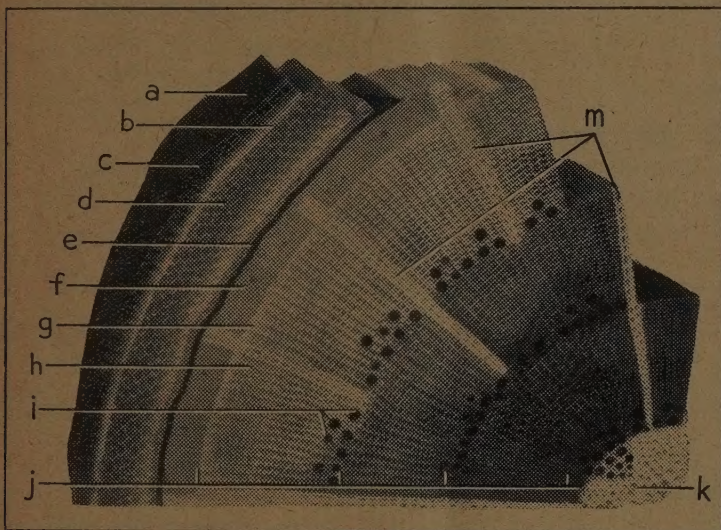
It is strongly suggested that common orchard practice is causing fruit trees to react adversely, and the question arises—"What can be done to restore to the bark its normal softness and increase its ability to expand



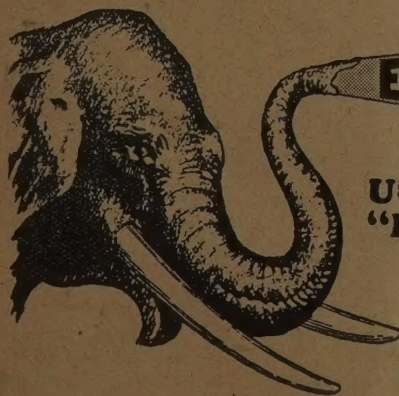
The bark protects the living tissues and is the storage place for reserve food supplies.

in response to the pressure set up within, and yet not take away from it any of its protective powers or other functions?"

It is an established fact that trees sprayed with Gargoyle Red Spraying Oil are softer in the bark, healthier, will blossom and leaf earlier, their leaves will, over a period, increase in size beyond normal and stay on the tree for a longer period—up to 3 weeks—than leaves of trees not sprayed with this oil. Before advancing any theory as to the probable causes of this phenomenon, we will place two more facts before you. First: That it has been established that the activity of the cortex food storage cells and the cambium commences before blossoms or leaves show their appearance. Second: That the renewal of activity of certain fruit trees after their Winter dormancy and their response to their environment earlier than unsprayed trees or than trees sprayed with a crude oil can be definitely associated with the fact that they had been sprayed with red spraying oil. The photographs on page 6 prove this beyond all doubt. Now, as to possible explanation of this: The late Mr. John Cronin, at one time Director of the Melbourne Botanical Gardens, one of the greatest horticulturists Australia has produced and whose ability earned for him an international reputation, performed many experiments and did considerable research work on this phenomenon in



This model of cross section of a tree from pith to bark, shows: (a) Cork; (b) Cork cambium; (c) Lenticel through which oxygen passes to cortex cells; (d) the Cortex foodstorage cells; (e) Hard bast; (f) Phloem or soft bast; (g) Cambium; (h) Wood fibres; (i) Wood vessels or conduits up through which water rises; (j) Annual rings (3 years); (k) Pith; (m) Medullary rays which trans-locate food from bark throughout tree.



ELEPHANT BRAND SPRAY

Use
"ELEPHANT" Brand

Arsenate of Lead—Quality Stands Alone.

We can supply all your Spray Requirements—ARSENATE OF LEAD (Pastes or Powder), SPRAY SPREADER, SPECIAL COPPER MIXTURE, LIME SULPHUR, WHITE OIL, NICOTINE SULPHATE, RED OIL, Etc.

Extract from "BETTER FRUIT," March, 1937, by Dr. R. L. Webster, Entomologist, State College of Washington, Pullman: CODLIN MOTH COVER SPRAYS—"Ever since the imposition of an arsenic tolerance in 1926, and even before that time, investigators have been testing other materials which may be used in place of lead arsenate. Following all these intensive and extensive investigations lead arsenate appears to have certain inherent qualities which place this material foremost as an insecticide for codlin moth control."

Are Actual Manufacturers and Distributors of
"ELEPHANT" Brand Sprays.

JACQUES PTY. LTD.,

Factory: MADDEN GROVE,
BURNLEY, N.I., MELB., VIC. Telephone: J 2003.

City Office: 31 Queen St., Melbourne. Telephone: Cent. 756

INTERSTATE AGENTS:

N.S.W.—Producers' Distributing Society Ltd., Valentine
and Quay Streets, Sydney.
Qld.—Buzacott's Ltd., Adelaide Street, Brisbane.
S.A.—Silbert, Sharp & Bishop Ltd., Rundle St. E., Adelaide.
W.A.—Westralian Farmers' Ltd., 559 Wellington St., Perth.
N.Z.—Pissey, McInnes Ltd., Box 1114, G.P.O., Auckland.

Tas.—Sole Agent for Southern Tasmania: E. R. Cottier
Pty. Ltd., Davey St., Hobart. Northern Tasmania
Agents: E. R. Cottier Pty. Ltd.—Depots: R. Evans,
Exeter & Cocker Bell Pty. Ltd., Devonport.

**Insist
Upon it!**

FRUIT GROWERS generally have come to depend on "Elephant" Brand Sprays. They find them absolutely reliable, efficient and of guaranteed quality.

In Preparing Your Bordeaux Sprays Use . . .

ESA BLUESTONE

— Manufactured by —

THE ELECTROLYTIC REFINING & SMELTING COMPANY OF AUSTRALIA LTD.
PORT KEMBLA, NEW SOUTH WALES.

The Right Material for Plant Disease Prevention and Control
GUARANTEED 99% PURITY

GRADES—Mixed Crystals, Fines, Granulated (Snow), Packed in Suitable Containers for Growers' Requirements.

Agents for All States: **ELDER SMITH & COMPANY LIMITED**, All Capital Cities.

BOOKLET—"Better Yields by Spraying with ESA Bluestone" obtainable on application to Elder Smith & Co. Ltd.

FRUIT BUYERS

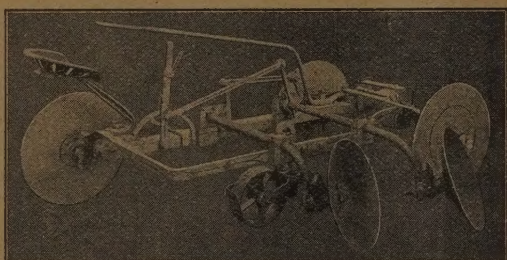
LEMONS, ORANGES, GRAPEFRUIT,
PEARS, PEACHES, APRICOTS,
BERRIES, CHERRIES.

BROOKE'S LEMOS LTD.

69-79 WHITEMAN STREET,
MELBOURNE SOUTH, S.C.S.
— Telephone, M 3141. —

"HILLMAN" ORCHARD STRIP PLOW

Double Furrow



A sturdy, strong plow equipped with reversible discs to enable the operator to plow up to, or away from the trees. Operated by a single lever and with nothing to catch branches of trees. To facilitate the movement of the plow around the orchard the discs are movable and lift clear of the ground.

Further particulars apply . . .

HILLMAN & KEOGH

Implement Manufacturers

Shipley Street, Box Hill, Melbourne, E.11

The steering arms are drop forged from the best mild steel and the main wheels are equipped with ball bearings.

Two medium horses can work this machine all day without tiring. A machine may be obtained for a trial at any time.

Fruit TreeS Fruit TreeS Fruit TreeS

Best Obtainable — Catalogue Free.

Quality first and all the time.
Book Now for Delivery June-July.
Orders reserved.

John Brunning and Sons

Somerville Nurseries,

**Somerville, Victoria
Australia**

Orchards & Nurseries 208 Acres.

Private Cool Stores, 17,500

Case Capacity.

— Established 1866 —

Phones:

Somerville 221 - - After hours 252

an endeavour to discover the reasons why certain types of oil emulsions so beneficially affected fruit-bearing trees. He co-operated with the Horticultural Officers of the Vacuum Oil Company in this work, and enunciated this principle: That oil emulsions of certain specifications act on the bark of trees in such a manner as to soften

the outer cork-layer and give it sufficient elasticity to respond adequately to the pressure of the increasing wood tissue, thus permitting the free and unrestricted movement of the nutritive sap streams within the cortex and below it.

Mr. Cronin summed this up by saying, "Oil of this type has definitely

an emollient action on the bark of the fruit tree." This statement has never been refuted or disproved.

It has further been suggested that any abnormal constriction of the cork-layer would interfere with the normal functioning of the layer (the cortex) beneath it. Refer again to the illustration on page 5 for position of cortex in relation to cork-layer. The cortex is the storage place for the sugars and starches and reserves of other nutrient substances, consequently the application of even minute amounts of oil of the type of Gargyle Red to the cork-layer will because of its emollient action, restore to the tissues their normal softness, counteract the effect of the astringent fungicides, and beneficially assist the functions of the vitally important food storage cells of the cortex.

There are many growers in all parts of Australia who do not need proof of these things. They know them from their own experience, and they spray to achieve this very desirable bark elasticity for its sake alone. This spraying is quite apart from, and additional to, normal control spraying for insect and fungus control. In a year when infestation by insect pests is not serious enough to warrant spraying, many growers give their trees a spraying with Red Spraying Oil for the attainment of normal softness in the bark tissues, thus removing the possibility of abnormal pressures when the first distribution of stored nutrition to blossoms and leaves begins in the Spring.

Visitor: "Is this a good place for rheumatism?"

Native: "Oh, yes, sir, I got mine here."

SPRAYS TO USE.

Fruitgrowers' Advisory Committee Meets.

At a meeting of the Shepparton Fruitgrowers' Advisory Committee, held in July, it was decided to issue the following advice to orchardists:—

Apricots.

For the control of Shot Hole, two Bordeaux sprays should be applied—the first to be completed by the middle of July and the second spraying at the pink bud stage.

Peaches.

The ideal period for tar distillate spraying is between July 4 and 9, but in any case spraying should be completed not later than July 16.

Black Aphis.

Any trees affected with Black Aphis should be attended to immediately with a spray of nicotine and soft soap. It has been found that a method of control of this pest that is beneficial is the encircling of the butt of the trees at ground level with fresh tobacco waste.

Pears: Codling Moth.

The committee urges that all chemical bandages be destroyed and the hessian bandages be removed and the grubs destroyed. Before replacing bandages all loose bark should be thoroughly scraped off. All rubbish around the butts should be removed and hoeing is recommended. Special attention should also be given to Quince trees. Those growers who have had difficulty in getting their Pears up to size should thin out the spurs when pruning.

Warning.

On no account should red oil be applied before tar distillate. A circular will be issued late in July in respect to spraying for San Jose Scale.—"Shepparton News."



Photographs taken at the orchard of Messrs. Moore Bros., Blackburn, Victoria. The photographs were taken within a few minutes on the same day. Note the red sprayed trees (right) in full blossom in comparison with the crude oil sprayed trees (left).

"Manuring of Fruit Crops"

THE MAIN IDEAS underlying the older systems of manuring were as follows: organic matter in the soil was considered of pre-eminent importance; lime was essential to the development of the "stone" in all stone fruits; nitrogen produced growth, phosphates were necessary for fruit-bud formation and potash promoted "quality," says Dr. T. Wallace, of the Long Ashton Research Station, in the latest Bulletin of the Ministry of Agriculture of Great Britain, a brief review of which follows hereon.

The natural outcomes of the above ideas were that the manures applied were predominantly organic, dung being especially popular, liming was widely practised, and nitrogen and phosphates were the main constituents of fertilisers, whilst potash manuring was generally neglected.

Manuring as a Factor in the Nutrition of Fruit Plants.

Perhaps one of the most important of the points that have emerged from manurial experiments on all classes of fruit plants is the recognition that manuring is only one aspect of the larger problem of the nutrition of the plants. This point was undoubtedly insufficiently recognised in the past and indeed very comprehensive and prolonged experiments have been necessary to establish clearly the part played by manuring in the nutrition of fruit crops. It is now clear that failure to recognise the complications of the "nutritional" problems, and the relationship of manuring to other factors, has been responsible for many of the previous failures and disappointments.

A further point demonstrated was that certain nutrient elements must be "balanced" with others, otherwise results were unsatisfactory. In practice, a wide ratio of nitrogen/potassium has been found to lead to very poor results and experienced fruit-growers now take great care to ensure that potash supply is adequate before applying nitrogenous fertilisers.

Age of Fruit Plants.

The age of fruit plants, especially tree fruit, is of great importance in considering manurial problems, and it is necessary to recognise that the actual aims of manuring and the manurial requirements of the plant change with age.

With tree fruits the aim in the earlier years is to build a strong framework as quickly as possible, and to do this a high level of manuring is necessary. With the Apple, however, it should be realised that fruits carried by the trees at this stage under this treatment will be of relatively low commercial value, and some sacrifice in income during this period is thus necessary to ensure better trees at a later stage.

Climate.

The growth characters of fruit trees are greatly affected by climatic conditions, and these not only influence the nature of tree growth as between different fruit districts in the country, but are responsible for large fluctuations in growth in any given orchard from season to season.

Investigations have shown that Summer rainfall exercises very important effects on fruit bud formation, and where such rainfall is high, trees are liable to make vigorous vegetative growth and to be relatively unfruitful. There is a tendency in this direction in the wetter areas, and under such conditions nitrogenous manures must be applied with great caution.

Soil Organic Matter.

The problem of maintaining an adequate supply of soil organic matter (humus) in orchards is sometimes a very difficult one, and in the past fruit-growers have often spent large sums of money in purchasing organic manure to ensure a satisfactory humus content. The problem was previously accentuated by the belief in high cultural methods for fruit crops, which led to the dissipation of the soil organic matter.

Tree fruits present the most serious problem, since they may be expected to occupy a given site for a long period of years. The question should receive attention from the earliest years of the planting, otherwise it is often very difficult to attack the problem later.

The greatest difficulties occur where, from the very beginning, excessively clean cultivation has been practised, as this leads to very serious depletion of the organic matter supplies, which is followed by loss of tilth, the soil tending to form clods, and drainage conditions to become unfavorable. Where these conditions have been developed on certain soils trees frequently become nitrogen-starved and die-back from this cause, since a satisfactory nitrogen level cannot be maintained in the soil without the presence of adequate organic matter. Further, water does not penetrate through the soil in a satisfactory way, and this leads to temporary wetness in rainy periods and to rapid drying out of the soil during periods of drought. When attempts are made to increase the organic-matter content at this stage by means of cover crops, it is usual to find that the seeds fail to germinate and in extreme cases even weed growth is negligible.

The best methods of guarding against these undesirable effects are as follows:—To allow a certain amount of weed growth or to plough in cover crops from the earliest days of the plantation. Hard and fast rules cannot be laid down, since the best method will depend on particular circumstances.

It should be added that in cases of depleted organic matter fertilisers are relatively ineffective.

The Use of Lime.

Lime has been widely used for fruit in the past, especially for "stone" fruits, for which lime has been generally regarded as essential for stone formation with which is associated the problem of "fruit set." This idea has also led to the opinion that soils containing good natural supplies of carbonate of lime are necessary for the successful cultivation of stone fruits.

Experience of these fruits, however, leads to the conclusion that the critical soil condition for successful Cherry culture is free drainage, whilst for Plums a heavy texture seems desirable, which is usually only available in association with adequate drainage on calcareous soils.

No critical experiment in this country has ever shown that liming is beneficial for any class of fruit on any of the soils normally used for fruit growing, and it is easy to point to outstanding successes with various fruits on somewhat acid soils, provided that adequate potash manuring has been given.

On the other hand it must be pointed out that high lime contents of soils are often associated with failures of various classes of fruit plants, including Plums and Cherries, due to lime-induced chlorosis, of which the direct cause is deficiency of iron.

It seems quite clear that regular and heavy liming is unnecessary for fruit, and dressings of lime should only be given with the object of preventing the development of strongly acid soil conditions, and as a means of preserving the structure and tilth of the soil and of maintaining a favorable reaction to cover-crops.

The Use of Nitrogenous, Phosphatic and Potassic Fertilisers.

Nitrogenous Fertilisers: These are very valuable to the fruitgrower, but must be used intelligently. It has been shown previously how nitrogen is of primary importance both for vegetative growth and fruit bud formation, and these facts are evident in fruit plantations. With regard to yield, very low conditions of nitrogen result in low yields, medium nitrogen level often in optimum yields and excessively high level in over-vegetative growth and decreased yields.

Quality is greatly influenced by nitrogen supply, high nitrogen generally leading to large fruits, poor color and poorer dessert quality, but better culinary quality, poor keeping and travelling properties and liability to bruising, and these facts must be borne in mind when nitrogen is used to increase yields.

It is also of fundamental importance to ensure that adequate potash supplies are present before attempts are made to increase growth and crops by nitrogen, or potash shortage may be aggravated and leaf scorch and cull-grade fruits result.

Phosphatic Fertilisers: Although the effects of phosphorous deficiency in pot experiments have been shown to be as drastic in respect to growth and yields as those of nitrogen deficiency, very little evidence of deficiency of the element has been obtained under field conditions either in this country or abroad. In view of this result it can only be concluded that fruit plants are "good feeders" for phosphorus under plantation conditions. Cases are known where fruit

— THE —
BAVE-U

Power Sprayer

— Keeps the Mixture in the barrel as even at the end as at the beginning of Spraying. —

Information with pleasure.

Russell & Co.

Box Hill, E.11
Victoria

trees—Plums and Apples—thrive in soils on which ordinary agricultural crops yield very poor results due to phosphate deficiency.

In view of the very serious effects that follow from phosphorus deficiency in sand cultures and of the fact that cases of deficiency are occurring in field experiments, it would appear unwise to neglect phosphatic manuring simply because spectacular results do not follow from it. On the other hand, experimental results and experience both suggest that the old practice of applying phosphates year after year was wasteful and that phosphatic fertilisers should only be applied in moderation.

Potassic Fertilisers: Field experiments on all fruits tested have emphasised the fact that adequate potash supply is of fundamental importance in the nutrition of fruit plants, and experience has shown that potash deficiency is the most frequent cause of serious nutritional failures of the

V "VALLO" V TAR DISTILLATE (Ovicidal Wash)

Definitely kills overwintering insect eggs, thereby controlling aphids and all other destructive pests.

Will thoroughly cleanse trees and rid them of Moss, Lichen, Rough Bark, thus destroying the winter home of these Pests.

Use "Vallo" Ovicidal Wash, the wash with the best Ovicidal properties during the dormant period of trees or plants.

Victor Leggo & Farmers Ltd.

222 Queen Street, Melbourne

Telephone: Central 1243 (3 lines).

G.P.O. Box 508-H.

Supplies obtainable all Merchants and Stores.

WEED, SCRUB and TREE KILLERS

"VALLO" PENTOXIDE

LIQUID 36% As_2O_5
GRANULATED 83% As_2O_5

ARZEEN

LIQUID 48% As_2O_3
POWDER 80% As_2O_3

Highly Concentrated Preparations of

SOLUBLE ARSENIC

READY FOR IMMEDIATE USE

The most effective and economical weed-killers. Eradicates blackberries and all other noxious vegetation. Completely kills useless timber and prevents growth of suckers.

Supplies Obtainable All Stores

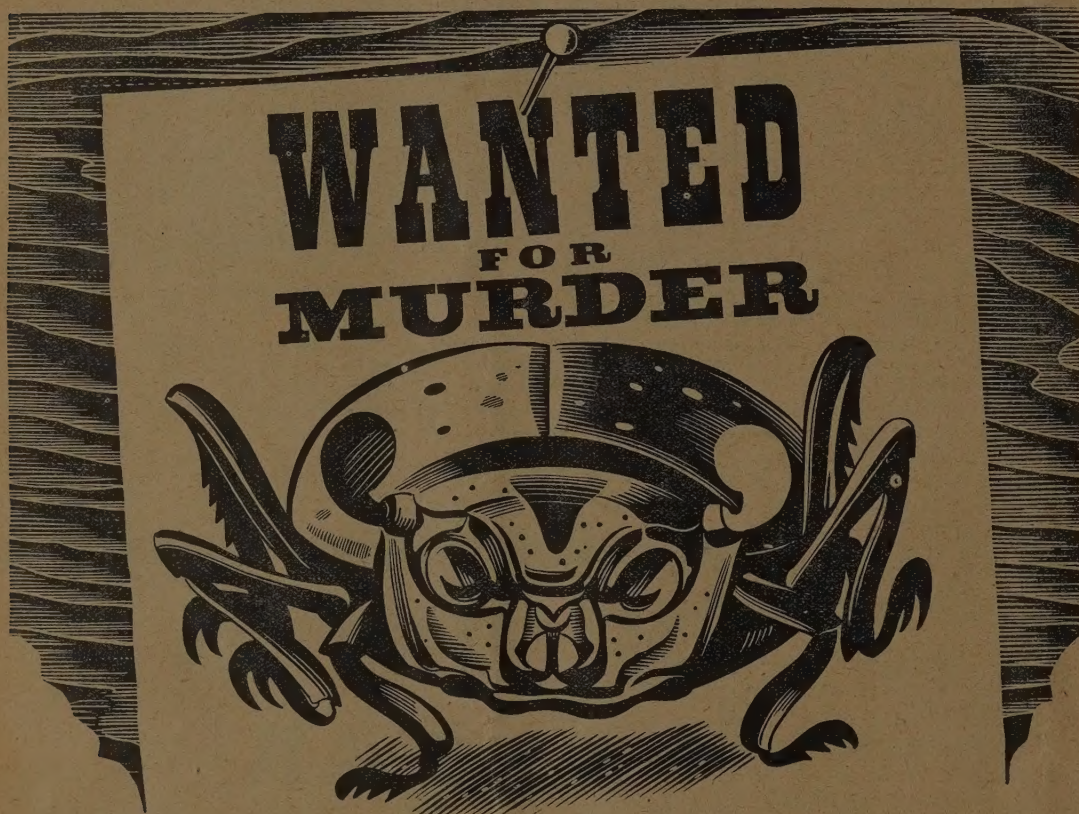
Write for Particulars, Dilutions, Etc.

VICTOR LEGGO & FARMERS LTD.

Phone: Central 1243

222 Queen Street, Melbourne, C.1

G.P.O. Box No. 508 H



Police your orchard against marauders with Gargoyle RED

The kind of killer one shoots "on sight"—with a spray gun "loaded" with the finest control spray you can buy! . . . Gargoyle RED Spraying Oil—without a rival in the horticultural world. Use it as part of a comprehensive spray program; use it as your chief control in the DORMANT period—it kills eggs laid in bark; it suffocates scales, woolly aphis, red spider; it encourages early blossoming and a longer leafing period; it improves the health of the tree irrespective of whether your trees are infested or not. Best time to spray Gargoyle RED is near as possible to bud burst; and select a sunny day for best results.

Gargoyle RED Spraying Oil

different classes of fruits in commercial orchards.

It has also been common experience that cases of failure due to potash deficiency are difficult to remedy, often requiring a few seasons of treatment before the bad effects are wholly overcome.

If losses from this cause are to be averted, steps should be taken from the time of establishment of a new plantation, or even a season or two previous to this, to ensure that the soil is not lacking in potash. As already pointed out, nitrogenous manuring is either ineffective or even harmful if potash is not present in adequate amount.

In cases of severe potash deficiency heavy dressings for three or four seasons are usually required—say 3 to 5 cwt. per acre of sulphate of potash annually.

Methods of Applying Manures to Fruit Plants.

Fruitgrowers often feel uncertain as to the best method of applying different kinds of manures to various fruit plants.

As regards tree fruits, information on the distribution of roots in various soils has been practically negligible until quite recently, and is still very meagre owing to the laborious nature of the work and the great expense involved in carrying out comprehensive investigations on this subject.

The two critical points concerned in relation to manuring are spread and depth of roots, and in the latter connection practically no knowledge exists of the depth at which roots feed in the soil.

As regards spread, it may generally be assumed that the roots extend well beyond the tips of the branches, and hence in plantations of fully-grown trees the roots may be regarded as practically filling the area.

Regarding the depth of feeding roots, it has been observed that trees will react to early Spring dressings of nitrogenous manures during the same season, but that there may be a delay of a season or so before the effects of potash dressings are perceptible. Moreover, data relating to available phosphates and potash have been collected from many soils of varying textures in numerous plantations and orchards where manuring with these materials has been regularly practised for many seasons, and this information shows that for medium to heavy textured soils the added fertilisers only penetrate very slowly. In lighter soils penetration is quicker, but is still relatively slow.

These facts suggest that manures for tree fruits should be broadcast over the whole area of a fully-planted orchard and that, whilst nitrogenous fertilisers are effective as top-dressings, potassic and phosphatic materials should be ploughed in. No relevant data are available regarding the most efficient method of adding these two latter kinds of manures where grass culture is practised.

When trees are young and only occupying a small area of the soil with their roots, it will probably be best to apply nitrogenous materials with reference to estimated root spread, while special dressings of phosphates and potash may be given over the same area and, in addition, general dressings of these latter applied over the whole area so as to build up supplies in advance.

Time of Application of Manures.

Until further evidence is available it may be assumed that time of application of phosphates and potash is unimportant and that quick-acting nitrogenous fertilisers are most effective when applied between July and September.

Manuring of Particular Fruit Crops.

The Bulletin goes to some lengths to describe in some detail the ferti-

Diseases of the Strawberry

Studies Made in Victoria

It was not till 1936 that crinkle and yellow edge, as a form of degeneration disease was identified in Victoria, states Mr. A. T. Pugsley, B.Ag.Sc., in the "Journal of Agriculture." Degeneration disease in Strawberries are known in most growing countries, however, the main symptoms are that the plant wilt before mature bearing, the leaves dry and shrivel, and the berries wither. Early in the study the indications showed that the disease was runner borne, but it was aggravated by poor drainage conditions.

In describing the above diseases, Mr. Pugsley reviews both crinkle and yellow edge as follows:—

Crinkle Disease.

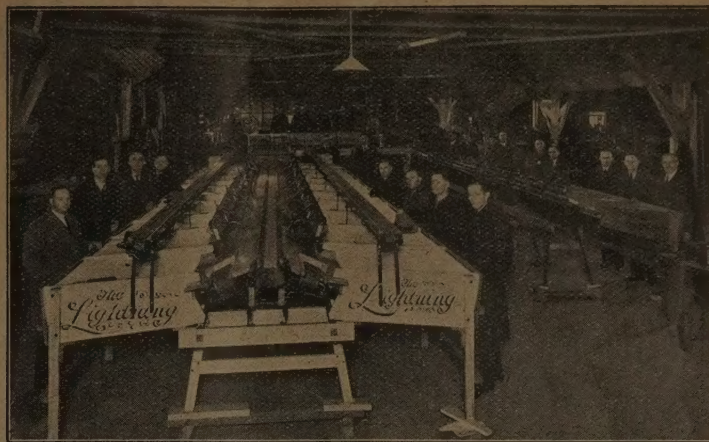
In Victoria the crinkle symptoms on the Melba variety are very similar to those described by Zeller as follows:—The most characteristic symptoms are crinkled condition and yellowish areas of the leaves. The primary symptoms which show up about two weeks after the plants are infected are extremely localised, starting in small developing leaves as mere pin-point areas. These spots enlarge slightly, and may become reddened or necrotic. Besides this stippling or pin-point mottling, some leaflets exhibit most uneven chlorosis. This is especially true in advanced stages of crinkle—the yellowing ex-

tending in streaks along a few veins toward the midvein. During any season of the year a mature plant affected with crinkle is a lighter shade of green than normally. The leaves have short petioles, giving the plants a flattened appearance.

Yellow Edge.

The Strawberry yellow edge disease, first noted in England in 1930, was described by Harris in 1933. In 1934 Howells states that yellow edge became fairly well established in Scottish Strawberry plantations, where most of the infections were traceable to imported English material. Diseases closely resembling yellow edge have been reported from Canada, New Zealand, and Tasmania. In a recent report Harris and Hildebrand, in making a comparative study of the degeneration diseases of English and Canadian varieties, have demonstrated the close similarity existing between yellow edge disease in England and the analogous disease in Ontario.

The following symptoms of yellow edge are those described by Harris, who points out that it is important to remember that under English conditions the diagnostic leaf symptoms have been completely manifested only from the middle of September to the end of October (i.e., in Australia from mid-March to end of April). The symptoms on the leaves consist of a



Group of South Australian orchardists inspecting "Lightning" Fruit Grader built for the Leeton Co-operative Cannery.

Included in the group are representatives from Walkerie, Cadell, Kingston, Barmera, Berri, Renmark, Myponga and Salisbury. This Grader, which has been installed at the Leeton Cannery, is for handling Apricots, Peaches, Apples and Citrus fruits. It consists of a three runway single-file elevator and three runway polishing brusher, four sorting tables and sizing machines which provide for eleven sizes, all sections being chain driven.

yellowing of the marginal region accompanied by (a) a general dwarfing, (b) an irregular curling of the marginal region, (c) a downward curling of the midrib, and (d) a twisting of the whole lamina. In general appearance the plant is abnormally "flat" being composed of a zone of more or less normal outer leaves, enclosing a central zone of dwarf "yellow edge" leaves.

In regard to the control of yellow edge, Harris, of East Malling, in dealing with the question of the "Maintenance of Reliable Supplies of Virus-free Runners," states that the outstanding success of certain growers in maintaining the vigor of their "strains" of such susceptibles as Royal Sovereign has depended to a large extent on their intuitive elimination of virus plants from their runner beds. Further, as the efficacy of roguing for maintaining supplies of yellow edge free runners depends on the relation between infection and the appearance of clearly visible diagnostic symptoms, it is well to remember the factors which may cause the masking of yellow edge symptoms. These are—

(1) Seasonal and Weather Conditions.—Symptom expression is encouraged by cool, moist conditions, and is masked in hot, dry weather.

(2) Age of the Infected Plant.—It is found that roguing is more likely to be effective on a two-year old bed than on a maiden runner bed.

(3) Soil Conditions.—The symptoms were found to be more prominent in diseased plants growing in poor soil.

Resistant Varieties.

As with all diseases, the use of resistant varieties is perhaps the best way in which to overcome loss. This applies particularly to Strawberries which are vegetatively propagated so that the difficulty of obtaining and fixing pure lines is not encountered. Zeller reports that the United States Department of Agriculture, in co-operation with the Oregon Agricultural Experimental Station at Corvallis, is breeding new varieties of Strawberries in order to obtain, not only desirable sorts for particular uses, but also varieties which may possess resistance or immunity to the crinkle disease.

Summary and Conclusions.

An account is given of a degeneration disease of the Melba Strawberry. Observations have shown that the disease resembles the American crinkle. In addition to the virus symptoms which appear in the Autumn, what appears to be a wilt stage of the same disease may occur in the early Summer when the plants are fruiting. It would seem that plants infected with

the crinkle virus are unable to withstand the stress imposed on them when the first burst of hot weather in the Summer occurs—this being particularly so if soil drainage is poor. The exact relationship of this wilt stage to crinkle remains to be determined.

A second degeneration disease—yellow edge (sometimes in association with crinkle)—was found to be present in plantings of the Royal Sovereign variety.

Although stocks of Melba Strawberries have been observed, showing 100 per cent. infection with crinkle, no evidence of yellow edge symptoms have yet been observed in this variety.

The Strawberry Aphid, the vector of both crinkle and yellow edge, is widespread in Victorian Strawberry plantations, particularly in the Spring and Autumn months.

Having reviewed overseas work on these diseases, three methods of approach to the problem of controlling yellow edge and crinkle present themselves. They are:—

(1) The selection of runners which have been obtained as free from virus as possible, followed by frequent inspections during the growing season, so that all diseased plants can be removed as soon as they are detected. One of the first difficulties which would be met in carrying out this work lies in the fact that the symptoms are not always clearly defined, so that a certain degree of skill would be required to recognise the doubtful cases. The finding of some other more certain method of identifying diseased plants would, of course, overcome this difficulty.

(2) A second line of attack would be the control of the Aphid vector by the application of nicotine sprays and dusts. This has been suggested by various oversea workers, but as yet no definite results of the efficacy of such a treatment are available.

(3) A more radical means of control lies in the development of resistant varieties. This is a long process, but appears to show promise for two reasons—

(a) A number of varieties and the wild species *F. chiloensis* show a marked degree of resistance, and

(b) the Strawberry is a convenient plant for breeding, since it is propagated vegetatively, so that once the desired cross has been secured, the work is completed.

The extent to which any or all of these methods can be effectively applied under Victorian conditions has yet to be determined.

MANURING OF FRUIT CROPS. (Continued from page 8)

liser programmes for various fruits that arise logically from the generalisations which have been discussed above. It is clearly impossible within the space of a short review to repeat these in detail, but the Apple, as our main fruit crop, might be taken as an example.

Briefly, then, for Apples grown under normal conditions of clean cultivation and with variations of quantities within the limits mentioned depending upon the relative fertility of the particular soil, it is recommended that potash be applied at 2 to 3 cwt. per acre per annum from before or at planting time and continued at that rate until the trees are all growing healthily at four or five years of age when the annual dressing may be reduced to 1 or 2 cwt. This will then be adequate unless any signs of potash deficiency or nitrogen excess appear, in which case the potash application should be raised to 3-5 cwt. per acre per annum until the trouble disappears.

Phosphate requirements will be met by an application of superphosphate at 2-4 cwt. per acre per annum (at the Australian grade of super; English super. is generally only 14 per cent. P2O3) every two to five years; applications are especially important in the early years and probably one at planting, one after two years and then another after three, four and five years' intervals would suffice. In a year when super. and potash are both used, they should be mixed, broadcast over the whole area and deeply ploughed under. When no super. is used, the same remarks apply to the annual potash dressing.

For nitrogen, nitro-chalk, nitrate of soda, etc., are mentioned, but sulphate of ammonia would certainly be equally effective. An annual application of from 1 to 3 cwt. per acre is recommended and, bearing in mind the necessity for vigorous vegetative growth in the early stages, it seems probable that the heavier applications should be used on younger trees and adjusted yearly in accordance with the effect noted from the quantity used in the previous season.

From the Australian viewpoint, this is, of course, quite revolutionary, but it is of interest to note that there is at least one Westralian grower who has been following some such programme for at least several years. The annual dressing, applied and ploughed under in Spring, is, in this instance, 6 lbs. of potash and 2 lbs. of ammonia per tree (or approximately cwt. per acre). Super is applied in some years, to the cover crop, which is sown annually. In detail then, this is almost identical with the English programme as outlined. It may be added that this Bridgetown grower regularly secures up to five shillings per case more than the average market price for his Grannies and his Yates, which are noted for the correct coloration and remarkable keeping properties ex cool store.

Since generally Australian growers are dissatisfied with their fertiliser programme at least as regards visible effects, it seems reasonable to expect that many of the more progressive men, especially when planting new areas, will make a local trial of this new system, of which the author of the Bulletin is so thoroughly confident.

It should have been mentioned earlier, that a big section of the Bulletin is devoted to the publication and discussion of specific experiments in various parts of England on various classes of fruits. Naturally, these results fully bear out the general recommendations which, of course, were based directly upon experimental evidence.

Whilst the foregoing review is representative of the most striking sections of the Bulletin, many growers will wish to read the matter in full. Consequently, arrangements have been made by this Journal to obtain supplies for growers upon receipt of an application accompanied by a postal note or postage stamps to the value of 2/-, which covers all costs.

(Bulletin No. 107 of the Ministry of Agriculture and Fisheries; published by His Majesty's Stationery Office. Price (U.K.) 1/3 net, by T. Wallace M.C., D.Sc.)

APPLE PUBLICITY

Successful Efforts Continue

THE EDUCATIONAL Publicity Campaign to increase the consumption of Apples is being continued. The Campaign generally is built on the report of Nutrition Committees here and in other parts of the world, that the average consumption of fruit is not sufficient for the health of the people. Professor Harvey Sutton, Chairman of the Nutrition Committee in New South Wales, remarked that we are on a campaign to change the diet of the people, and that this takes time. He stated it took fully three years of continued effort in N.S.W. to make the Milk Campaign successful.

In N.S.W. and Queensland special efforts are being directed by local committees to the distribution of Apples to State Schools and addresses to scholars. In South Australia the local Committee is concentrating on co-operating with the retail trade to increase Apple consumption.

Reports are issued from time to time by Nutrition Committees in the several States and these unanimously emphasise the need for a greater consumption of raw fruit. These reports present a wonderful opportunity for the fruit industry to drive the message home. Literature is being constantly supplied by the Apple and Pear Council to women's organisations, Baby Health Centres, Mothers' Clubs, Kindergartens, and the like.

Handwriting Competition.

Plans are being completed to launch a handwriting competition throughout Australia, detailing the

virtues of the Apple. The wording is to be as follows:—

Apples after every meal!

Eat the lot, both flesh and peel.

"Nature's Toothbrush" they are styled,

Excellent for man and child.

Tone the nerves and cleanse the blood,

Best of medicine and food.

Prizes and details are as follows.

There will be separate competitions for girls and boys in each of the following three sections.

Age.	Right Hand.	Left Hand.
Under 10	1st prize, 10/-	1st prize, 10/-
	2nd prize, 5/-	2nd prize, 5/-
	3rd prize, 2/6	3rd prize, 2/6
Under 14	1st prize, 15/-	1st prize, 15/-
	2nd prize, 10/-	2nd prize, 10/-
	3rd prize, 5/-	3rd prize, 5/-
Under 17	1st prize, £1	1st prize, £1
	2nd prize, 15/-	2nd prize, 15/-
	3rd prize, 10/-	3rd prize, 10/-

Conditions.

1. Competitors shall be grouped as follows (age on Jan. 1):—Under 10, under 14, under 17.

2. Girls' and boys' work shall be judged separately.

3. Specimens written with the left hand shall be classified and judged separately in all groups.

4. Specimens should be written in blue-black ink, on ordinary opaque ruled exercise-book paper or foolscap, and not between double lines.

5. The following particulars are required: Christian and surname in full, address, school, age on Jan. 1, and hand (left or right).

6. Important. Name, address and school must be written on the back of the specimen. Sex (girl or boy), age, and hand on front.

7. Every specimen must be certified by a head teacher, clergyman or Justice of the Peace.

8. Finalists shall be asked to submit a certified speed test (average 20 words per minute).

9. Prizes shall be awarded in any group only if the standard of the work be deemed to justify an award. Three prizes may be awarded in each of the twelve groups.

10. Entries must reach the Secretary, Aust. Apple and Pear Council, 528 Collins-street, Melbourne, Vic-

HARCOURT (VIC.) WANTS INFORMATION.

On the Proposed Apple Board.

At a meeting of Harcourt fruitgrowers on July 20, a discussion upon the proposed Apple Board took place, and it was thought desirable to obtain more information. Consequently, Mr. Pollard, M.P., is to be asked to request Mr. Cameron, who is sponsoring the Bill, to visit Harcourt and give growers more information regarding the details of the proposal.

VICTORIA.

Buds Indicate Good Fruit Crops.

The July report of the Victorian Department of Agriculture states that although good rains had fallen in various fruitgrowing districts, conditions of water storages in the Bendigo Harcourt area was still causing anxiety.

Development on Apples was generally good except in the Bacchus Marsh area, where leaf scorch was observed and the buds were weak. Peaches and Apricots were showing promise of fairly good crops throughout the State; Pears generally present an excellent crop; Cherries, fair.

Pruning was proceeding. Tar distillate and red oil spray was completed by the end of the month. In the Goulburn Valley an intensive campaign in orchard sanitation to combat the codlin moth was operating.

In the irrigation areas vine pruning was nearing completion, and some growers were either increasing the height of their trellises or converting them to the T-piece formation to accommodate the increasing vigor of their vines. The green-manure crops were developing satisfactorily, and delving and the burial of prunings had again been fairly generally adopted.

A considerable area of vines had been planted this season in the neighborhood of Swan Hill, largely for the purpose of catering for the local and overseas freshfruit markets. The first irrigation for the coming season was expected to begin shortly.

In the non-irrigated areas the rainfall to date was seriously below the normal Winter average, and the operations of pruning and ploughing were well advanced.

Citrus.

The quality of the Navel crop was excellent, but owing to heavier supplies and lighter demand, the prices had not been remunerative to the grower.

WILL SELL MORE FRUIT.

Trays for Retail Use.

In last issue we called attention to the "Karrybetta" fruit tray, a new method of packing, transporting and selling fruit that has just been developed by a Melbourne company. It is claimed for this tray that not only does it prevent bruising of the fruit in transportation and distribution, but it preserves the life of the fruit so that the retailer gets unblemished fruit, even after long holding in the fruit store or retail shop.

We have been asked to check on the manufacturer's claims and, in the interests of the industry, have agreed to go thoroughly into the matter and report our findings in our September issue. Upon first view, the Karrybetta fruit tray appears to fill a definite need, but a full description of the system, with our considered judgment, will appear in our next issue.

Make Money from Mushrooms . . . An Assured Market Waiting

FASCINATING AND PROFITABLE

We explain how to MAKE THE RIGHT START—what your exact requirements are of straw and manure—how to prepare your bed—how to plant the spawn which we will supply—how to pick and market your mushrooms—in short, how to be A SUCCESSFUL GROWER MAKING MONEY out of your venture.

Write for FREE BOOKLET and enclose 3 Stamps to

British Mushroom Industry, Pendennis Chambers, 375 George Street, Sydney

Big Order for Packing House Equipment

secured by

The "Lightning" Fruit Grader Company

See illustration published elsewhere in this paper.

The Leeton Co-op. Cannery, which is now conducted by fruitgrowers in the district, is installing a large plant manufactured by The "Lightning" Fruit Grader Company for handling—

Apricots - Peaches - Apples and Citrus Fruit

Some outstanding features which influenced the order for the "Lightning" product—

1. The **Three Runway Single-File Elevator and Three Runway Polishing Brusher**. By using this type of Brusher all pressure is eliminated and the fruit is so spaced that it cannot be damaged in any way at all.
2. The **Sorting Tables** provide for four qualities, or alternately, two growers' fruit at the same time of two qualities each.
3. The **Sizing Machines** provide for eleven sizes and have Independent Section Rubber Rollers—all sections being chain driven.
4. The **Patented Scalloped Rollers** on the Sorting Elevators and Sorting Tables eliminate division boards. Scalloped Rollers are specially patented by "Lightning" and cannot be sold by anyone else. They eliminate any dropping of fruit over division boards by the sorters, also any possibility of squashing or rubbing of fruit. The fruit being round slightly overlaps the scallops, or collared rollers, enabling the full space on the rollers to be utilised, while keeping the fruit off the outside edge where it is liable to be damaged against the sides of the Elevator.
5. The **Special Wavy Motion** on the Sorting Tables enables the fruit to turn sideways in its forward travels, as well as in the usual forward turning when travelling, enabling the sorters to see every side of the fruit with ease.

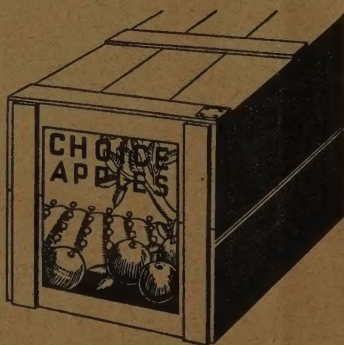
There are many other features which resulted in the selection of the "Lightning" plant against all other makes.

It will pay you to inspect "Lightning" fruit packing machinery and equipment before the next fruit season.

The "Lightning" Fruit Grader Co.

517 Albion Street - West Brunswick, N.12, Vic.

Phone FW 4181 (2 lines)



GOOD LABELS

... deserve ...

A GOOD PASTE

CHEAP LABELS

DEMAND IT

THE BEST PASTE

... is ...

DAVIS 444

ADHESIVE

With this easy to use cold water paste the labels always stay on.

Obtainable from all Hardware, Paint and other Stores.

NEW SOUTH WALES

Murrumbidgee Irrigation Areas

Dry Weather Affects Crop — Need for Humus in the Soil —
Navel and Valencia Crops Developing Nicely — Interesting
Evidence Before Fruit Industry Enquiry Commission.

(By Our Special Correspondent.)

DURING THE PAST MONTH, the weather has been very dry, and there has been a series of very severe frosts, which have in some portions of the district been detrimental to the citrus crops.

On the higher slopes, however, the frosts have apparently done little damage, and where the early morning sun can gradually dispel the effects of the frost, very little damage is noted.

The continued dry weather has, however, dried out the soil, and where green crops are growing, the effect of their contending with the trees when they are carrying a heavy crop of citrus fruit, is very noticeable.

Some of the growers who anticipated a severe Winter refrained from sowing green cover crops for this reason.

The growing need for humus in the soil of these irrigation areas is being felt more every year, and specially in such a dry Winter as the present one, the applications of sheep manure which have been been very liberally applied to many of the citrus farms, is showing out a marked benefit.

The effect of heavy dressing of animal manure seems to have the tendency to retain the moisture in the soil, and in such a dry Winter this is a very important factor, when, owing to the lack of rain, any green crops which have been sown are contending with the trees for the surface soil moisture.

The great difficulty, however, is to obtain sheep or other animal manure in any quantities at reasonable rates, and contractors are scouring the back country stations for adequate supplies, and this entails often a cartage by truck of over 100 miles, while large quantities are brought in from as far away as Nyngan and other far-back centres, by rail to the Area.

Huge motor trucks capable of carrying up to eight tons of manure are to be seen conveying this commodity to the area, and even then the price has increased during past years until it is now 30/- a ton, but where large dressings have been applied as high as eight tons per acre, the beneficial result is most marked.

It seems a great pity that the large quantities of rice straw, much of which is burnt off every year, cannot be utilized by some process of manufacture into a more readily decayable substance for application to the orchard lands.

The rice straw itself is a somewhat hard substance, and does not readily decay, but probably if treated on somewhat the same lines as by the "Adco" process, it may yet prove a valuable fertilizer in supplying the de-

ficiency of humus so noticeable in these hot dry climates.

Some years ago, one or two growers tried out the experiment of laying the rice straw over the entire surface of the land in between the trees, but during the hot Summer months the risk of fire through careless use of matches is always present, and one grower lost several acres of trees through a fire running through his orchard owing to this circumstance. Probably for this reason the use of a straw mulch has not been more generally used.

The Navel crop on these areas is picking out rather better than was at first estimated, and the quality of the fruit is excellent.

The various packing sheds which are contributing to the supply of this fruit for the New Zealand market, are busy packing consignments for shipment, and it is hoped that a continuous supply can be maintained, so as to ease the local supply, for which prices have not been as good as anticipated.

Valencias are coloring very early this season, and in some cases the fruit is likely to be somewhat small, specially where crops are heavy.

The quality, however, appears to be very good, and as there is some time yet to elapse before this fruit will be required for market, it is possible that although it has colored early, it may still develop in size to the required standard.

Fruit Enquiry Commission.

The Fruit Enquiry Commissioner (Mr. McCulloch, S.M.), accompanied by C. G. Savage, Director of Fruit Culture, again visited Griffith on July 11, and sat for some days at the Court House taking further evidence. Mr. K. H. Todd, President of the R.S. & S.I.L.A., represented the Soldier Settlers at the Enquiry.

One of the most contentious points that has always arisen at the numerous enquiries which have been held on these areas, is the living area necessary to maintain a grower and his family in reasonable state of decent living conditions, and opinions on this point vary considerably.

Varying areas ranging from 15 to 50 acres were mentioned by the different witnesses called, but most of them agreed that the productivity of the land was the most important feature, together with the ability of the grower himself to obtain the best results therefrom.

Robert A. Smythe, a soldier settler gave evidence as to his planting of citrus and other fruits, and told the Commissioner that he had been affected by seepage from the Commission

channel, and at one time was in danger of being deprived of his holding owing to his inability to obtain payable returns from his Sultanas, which he had ultimately rooted out owing to the unsuitability of the climatic conditions during harvesting time. Up to the present time he had not made more than £200 in any one year from his holding, and his inability to obtain financial assistance at a critical period almost crippled him.

Since then he had been able to obtain assistance to enable him to reconstruct his farm, and since the Rural Bank had changed its policy in regard to assisting settlers, in respect to holding over demands for repayment of Crown liabilities, he had been enabled to pull through, and now hoped to be able to work his farm to a successful issue.

James Coombe, another soldier settler, stated that he had experienced trouble and loss through stocks of vines supplied to him in the early days of planting up his farm.

Phylloxera resistant stocks had been used for both Sultana and Black Shiraz Grape vines, and had proved unsuitable, the Sultanas on 1202 stocks had never borne a payable crop, and the fruit on both types of stock gave very straggly bunches with smaller berries than those on their own roots. The citrus on his farm had never given the returns expected greatly owing to the fact that he had a very long run for the irrigation furrows, and the trees in the centre portion of his farm had not developed like those at either end which received more water.

In spite of the reductions of debt which had been allowed him in the writing off, he had never made sufficient returns to meet his full commitments to the Crown, and leave himself sufficient to live on. His best year had netted him less than £300 after paying working expenses and current rates, without considering any payment off the mortgage debt.

Enos J. Hudson, Chairman of the Yenda Producers' Co-op. Coy. and a farm holder at Yenda, also gave evidence.

Mr. Hudson gave detailed accounts of costs of production in both the wine Grapes and dried tree fruits, and stated that in his opinion the growers' costs were kept to a minimum.

The yields of various vine and stone fruits on these areas were not nearly so high as on the Murray River Settlements, and he would base a production of 18 cwt. of Sultanas, 10 cwt. of Currants, and 25 cwt. of Lexias, as about an average to expect, with an average cost of production of £35 per acre.

He would average about one ton of Prunes per acre, but the trees would not show fruit until at least six years old, and usually seven years was a more general period to wait.

Mr. McCulloch asked Mr. Hudson at what age do Prune trees become profitable? to which Mr. Hudson replied: Never, at present prices.

Continuing, Mr. Hudson stated that for many years frosts had done con-

siderable damage to crops of fruit at Yenda, and specially to Sultanas, and in some years he had not picked a single berry from ten acres.

Gerald W. Beverley, Senior Fruit Instructor, Department of Agriculture and formerly general manager of the Pyap Estate, S. Aust., Murray Settlements, was called by Mr. Todd, and gave evidence as to the returns from Sultanas and other fruits on the M.I. Areas, and compared the returns with those of the River Murray Settlements.

Mr. Beverley also gave evidence as to frost damage at both Yenda and the Lake View areas, and stated that he had advocated the removal of the Mallee scrub adjoining these areas as far back as 1925, and he considered that owing to the smaller crops and the weather conditions which generally occurred at the drying period, even frost protection by means of oil burners would not make Sultana-growing a profitable industry on these areas.

Questioned by Mr. K. Todd as to what he considered a home maintenance area, Mr. Beverley stated that it depended on the land, the man in charge and the plantings, as some men could make a good living from 15 to 20 acres, while others with less favorable plantings would be in a hopeless position.

Mr. McCulloch: "It is a matter of productivity, is it not?"

"Yes, in conjunction with personal attention."

Red scale, continued Mr. Beverley, was one of the worst pests on the area, and although the settlers were contending with it well, it was useless trying to combat this pest by spraying, specially on large trees, and he considered that fumigation was the only method that would ultimately cope with this serious menace to the citrus industry.

P. C. Bottrell, Fruit Inspector, also gave evidence on the life of trees on the area, the planting of land and size of what he considered from personal experience as a grower, to be a living area, this area should certainly not be less than 40 acres in order to allow of an extension of plantings when the older trees gave out.

Much of the land which was planted up to citrus on this area he considered unsuitable, and would only base the life of many of the trees at 15 or 16 years.

Mr. Howard J. Braund, owner of farm 686, and Rural valuer for the Irrigation Area, was also called as a witness by Mr. Todd.

Mr. Braund, whose long experience as officer in charge of seepage investigation, prior to taking over his present position, has given him a particularly keen insight into all matters on these areas, but as he has been on these areas almost from their inception, no one is more qualified to express an opinion on the many matters which have arisen from time to time.

Mr. Braund is also one of the most prominent and largest citrus growers

*Gerrard Sales
and Service*

CREDO — We believe in the Gerrard system and in the goods we sell; the sound value of the continuous service that follows every sale. We believe this business grows each year because of the sound, honest basis on which it builds; and because of the recognition of true economy by users throughout Australia.

GERRARD
The Tie That Binds

GERRARD WIRE TYING MACHINES CO. PTY. LTD.

Melbourne, Sydney, Brisbane, Townsville, Perth, Adelaide, Hobart

"Generous

POTASH MANURING

MUST form the basis of the manurial programme," says Dr. T. Wallace, of the Long Ashton Research Station.

"To ensure that POTASH will be sufficient, annual dressings of POTASH should be applied during the early years, say 2-3 cwt. per acre."—p. 41, Bulletin 107, U.K. Ministry of Agriculture.

You are recommended to use from 1½ to 3 cwt. per acre of potash, broadcast over the whole land and **PLOUGHED DEEPLY INTO THE SOIL**, every year. If you want confirmation of this from official experiments, write for Bulletin No. 107 of the British Ministry.

For further information write to:

PACIFIC POTASH LIMITED

Research Service, Box 3843 T., G.P.O., Sydney.

✱ **POTASH MAKES all THE DIFFERENCE** ✱

F. 3/38

Cables—Monro, London

Codes—A.B.C. 5th Edition and Bentley's

GEO. MONRO Ltd.

The Most Important Fruit-Distributing Organisation in the World.

COVENT GARDEN MARKET, LONDON, and SMITHFIELD MARKET, MANCHESTER

Other Branches: BIRMINGHAM, GLASGOW, WORTHING, SPALDING and HULL



Sales on Commission, by Private Treaty only.

Over sixty years' of Fruit Distribution.

We do not purchase.

Our Sale Rooms are the largest and most up-to-date in England; consignments are therefore displayed to the best advantage, consequently, our returns are the best.

We have specialised in the Sale of Australian Apples and Pears by expert salesmen for many years past, and we have the largest and best customers in Great Britain amongst our clients.

Bigger and better business is our objective.

We make advances to cover cost of freight, etc.

(Established 1862)

DIRECTORS:

Major Edwin G. Monro, O.B.E. (Chairman), Geo. Monro, C.B.E., Bert J. Monro, Captain J. Stuart Monro, Alex. J. Monro, and C. Cole.

Chief Agent in Aust.—Major H. Dakin, V.D., Goldsbrough House, Macquarie Place, Sydney, N.S.W.

Victorian Representative
Southern Tasmanian Representative
Northern Tasmanian Representative
West Australian Representative

Esmond Russell Pty. Ltd., 395 Collins St., Melbourne.
W. H. Ikin & Son, Dunn Street, Hobart.
Bell & Gerrard, No. 300 Climitiere St., Launceston.
The Westralian Farmers Ltd., Perth.

on the Griffith area, and his work in the improvement of citrus by selection is in the matter of almost a fetish to him.

Mr. Braund gave much information which should be of material use in the enquiry, and stated that there were a lot of "off type" citrus trees on the area that could not possibly pay, and unless a grower could produce an annual average of five bushels of Oranges and six of Lemons per tree the business was not worth while carrying on.

The cost of bringing a citrus orchard into bearing on this area would be not less than £100 (one hundred) pounds per acre.

The estimated cost of producing a case of Oranges, taking a period of ten years, would be 3/4 per bushel, including all cultural operations, but excluding all marketing and costs of packing.

Other growers who gave evidence, were Mr. W. Edge, of Yenda, who gave much valuable detailed information as to costs of production and account sales, and Mr. W. Jackman, one of the most successful farmers on the area.

Mr. R. Mallinson, manager of the Griffith Co-Operative Company gave evidence regarding prices of dried fruits during the past six years, and confirmed the remarks of other witnesses in respect to the unsuitability of the area for Sultana and Currant growing owing to climatic conditions.

Deliveries of Sultanas to the shed in 1933 was 948 tons, and this amount had declined by 1937, many growers having either taken out their vines or worked them over.

Mr. Mallinson also dealt with the stabilization of the Prune industry by the Prune Growers' Union, which was a combination of the Young, Yenda and Griffith Co-operative Companies.

The Griffith Producers' Company had also had a large proportion of their tenders for the export of citrus to New Zealand accepted, and in June had exported nearly 20,000 (twenty thousand) bushels to N.Z. at a satisfactory price, and further shipments were going forward.

NEW APPLE VARIETIES.

Few Developed in Half Century.

ONLY A FEW of many varieties of Apples grown in this country combine dessert quality with attractiveness and desirable growth habits, says John R. Magness, fruit specialist of the United States Department of Agriculture.

A systematic breeding programme has been under way in the United States for 50 years. But only a few of the many varieties introduced during that time appear to have lasting merit, such as the Cortland, introduced at the Geneva, N.Y., experiment station for growth in New England, and the Harolson from the Minnesota station, a hardy variety for the prairie states.

In explaining this slow progress, Dr. Magness points out that the Apple breeder works for the next generation of trees and growers.

Many Seedlings Weak.

It requires 25 to 30 years to tell accurately whether the new variety is a superior Apple. Too, only in recent years have breeders known what parent stock to use.

It is known now that some varieties are triploids—having 51 chromosomes instead of 34. The extra set of chromosomes generally result in sterility, or the seedlings are so weak that they are of little value.

A few of the state experiment stations—where Apple breeding is a major project—have introduced Apple varieties that should be tested, Dr. Magness believes—"Better Fruit."

Frost Prevention

Tests in New South Wales

THE METHOD of protecting trees and vines in orchards by heating is by no means new, but until recently comparatively little local information on the subject was available to help a grower ascertain to what extent it might be possible for him to control losses from frost damage on his own property.

To arrive at definite information on the subject, tests were carried out in the Spring of 1936 as a result of co-operative efforts of Mrs. C. Hudson, Farm 1546, Yenda, the Department of Agriculture, the Council for Scientific and Industrial Research, the Shell Oil Co. and the Yenda Producers. These gave conclusive evidence of the possibilities of heating in the "frost pockets" in Yenda, and in 1937 four growers at Yenda heated various acreages: Mrs. Hudson heated 12 acres of Sultanias as against the 4 acres in the previous Spring, whilst the other three growers tried heating out for the first time. The results are given in the following article by Mr. J. R. Davison, Fruit Inspector, in the "N.S.W. Agricultural Gazette."

Principles of Orchard Heating.

There are certain natural phenomena which govern frosts, and which either allow for an economical heating to obviate frost damage, or show that the amount of heat that would be required, to effect a safe rise of temperature would be uneconomical.

These fundamentals are:—

- (i) Heat radiated by the sun during the day is absorbed by earth (the ground etc.) and the air above it.
- (ii) The earth absorbs more heat than the air.

By sundown the position is that the temperature of the air is higher near the ground, with a decrease at a more or less uniform rate with increased distance from the ground.

- (iii) At the time of day when the sun's rays cease to keep the air at the same temperature as the earth, then a reversal in the direction of heat flow takes place. The ground radiates heat, and in so doing heats the adjacent air, which rises, colder air coming in to take its place and is in turn heated. When the heat absorbed by the earth during the day is exhausted and cold air remains over a cold earth long enough, then a frost results.

Thus, after a calm night, there is a layer of cold air at the earth's surface, with a rise in air temperature as the distance from the earth increases.

In orchard heating practice this "inversion" is referred to as the difference between the temperatures at the "ceiling" and the heating level.

When heaters are lighted, the warm air rises until it reaches air naturally warmed to the same temperature. The height of this "ceiling" and the difference in the air temperatures between that at the "ceiling" and that of air 3 feet from the ground, determine whether or not a grower can, with profit, undertake protecting his crop.

If there is a rapid rise of temperature with increases in elevation, the depth of the air layer that must be warmed so as to prevent frost damage is less than if the air temperature increases slowly as the height above the ground increases.

Assuming the temperature to be 37 deg. Fahr. at 25 feet and at 3 feet (or where the shoots are bursting) to be 29 deg.; then somewhere below 25 feet, the air temperature would be at

a safe margin, say 34 degrees; and it would only be necessary to apply enough heat to raise the air below this level to a safe temperature, that is, by up to 5 degrees at the lowest level.

To raise the temperature higher than 34 deg. Fahr. at Grape vine rod level would be a waste of fuel, as all that is required is to raise the shoot to a temperature above that at which damage is known to occur.

Prevention.

Two factors must be considered by the grower who suffers from frost damaged crops:—

- (1) What increased return would accrue from a heated orchard, as against returns after damage has been done by frosts. It must be remembered that frosts not only ruin a current crop, but also have a stultifying effect on wood and buds for the ensuing year, even if there be no frost incidence in that year. The writer has seen vines so hit that no live canes were left on the main arms, except a few shoots coming from underneath, which shoots would not fruit until the next season.

- (2) Whether the degree of inversion is good enough to allow for economic heating.

To Obtain Atmosphere Temperatures and Degree of Inversion.

To obtain atmospheric temperatures a scaffold, is erected, and the temperature at 25 feet and at ground level taken on a number of nights when frost occurs, before the danger period in September-October arrives. The scaffold should be erected within the block, and then no outside body such as large trees, farm buildings, can effect the comparative readings taken.

In the morning following the frost, the thermometer at 25 feet is lowered and the minimum reading compared with that at say 3 feet. A height of 25 feet is used as the inversion level because it is thought that if there is not a good rise in temperature—7 or 8 degrees—at this height, the economy of heating becomes doubtful. It has been proven that sixty burners to the acre, burning at the rate of approximately 1½ pints to the hour, can maintain a rise of 8 to 9 deg. when the temperature at 3 feet is 30-29 deg. Fahr., and under actual heating conditions, it was not necessary to light up more than 50 per cent. heaters during frosts in 1937, when 29 deg. minimum was registered outside the heated area.

It can be taken as generally true that the "inversion temperature" (air temperature at 25 feet) is higher in the Spring than during the Winter months. This naturally follows, Spring days being warmer than Winter days as a rule.

It was noted that on all nights of heating in the 1937 trials that a heavy bank of accumulated smoke hung between the levels 6 feet and about 18 feet from the ground, showing that air within the "blanket" was 33 deg. Fahr. at least, and the higher strata progressively warmer.

Temperature Variations.

Weather conditions which engender fluctuations of temperature during a frost or near-frost are:—

- (i) Should a breeze spring up during the night, temperatures rise often above the zero, and render lighting-up unnecessary.
- (ii) A cold northerly drift (under Yenda weather conditions) depresses the temperatures.
- (iii) Any body of passing cloud, by impeding radiation, will hold the temperature at a safe level.

N.S.W. Seasonal Report

THE latest report of the N.S.W. Department of Agriculture, states that although rainfall was below normal in some parts of the State, falls in excess of the average occurred in other areas. In reporting upon fruit prospects, the following were mentioned.

Fruit.

Generally bleak conditions were experienced in the Northern Tableland and Batlow fruitgrowing areas, and it is as yet too early to indicate the prospects of the coming pome crop.

Good bud development is apparent on Apples, Pears and stone fruits in the Orange district. In the Bathurst locality, however, the position is the reverse for pome, but generally moderate to good for stone fruits.

Citrus:

Most of the Navel crop has been harvested at Moorland, the greater proportion of the Oranges having been forwarded to the Brisbane market. Particularly good quality fruit is to be seen in groves at Bulga. In many orchards on the Hawkesbury River the bulk of Navels has been cleared; the fruit remaining is commencing to fall. Large quantities are still going forward from the Windsor area; about 70 per cent. of the crop has been marketed and the remainder is becoming very mature and shedding is commencing. Harvesting has slackened off in the hills district, where about 50 per cent. of the crop remains to be picked.

Good crops of Valencias are in sight in the Maitland district, although these Oranges are small on heavily-laden trees which, in some instances, are breaking down with the weight carried. On present appearances a big percentage of medium to small Oranges is indicated at Windsor, although, as maturity progresses, improvement in size may take place. The generally heavy crop in the hills district is now well colored; quality is stated to be unusually good, and although sizes are disappointing at present, an improvement is looked for before harvest time. Crop prospects were maintained in the Parramatta-Camden districts.

Around Maitland harvesting of Joppas and Silettas is about to start. Marketing is proceeding slowly on the Hawkesbury River owing to the low prices ruling. Parramattas and Joppas are still on the trees in the Windsor area and little movement, except a few factory purchases, was apparent. In the hills district, Parramattas are inclined to fall, and only small quantities are being harvested. It is hoped that jam and juice processing factories will take a large percentage of the crop. Disposals are slow also in the Camden-Parramatta area.

Very good crops of Lemons are to be seen in the Maitland inspectorate. Frost damaged some of the fruit in the Hawkesbury and Windsor localities. Heavy yields are anticipated in the hills district, while in the Cam-

den-Parramatta area mature fruit is accumulating.

Sevilles are being harvested from orchards along the Hawkesbury River, but operations have not commenced at Windsor. Better quality Mandarins than for some years past are being harvested at Maitland. Marketing is being carried out freely from the Hawkesbury River locality; some lots, however, are commencing to lose quality. This fruit, owing to slow market clearances, appears to be a source of worry to growers around Windsor; heavy crops are the order, but some frost damage is noticeable. The good crop in evidence in the hills district is of variable quality; sizes, however, on the average are better than for some seasons past. Owing to the restricted demand, ripe fruit is accumulating on the trees in the Camden-Parramatta sector.

On the Murrumbidgee Irrigation Area, dry, cold and frosty weather with a few light falls of rain was experienced. Slight damage to fruit was caused by frosts.

Around Griffith Navels are picking well, but the fruit is commencing to fall early owing to cold weather, followed by rain and fluctuating temperatures. Yields are a little better than anticipated earlier, and quality is good. Export to New Zealand from Yenda is reported to be proceeding steadily and more large sizes are being forwarded to the Sydney market, mostly in two-bushel crates. Most of the fruit being picked at Leeton is being packed for export to New Zealand. The general quality is much better than for the past two seasons.

Some exceptionally good crops of Valencias are to be seen at Griffith, but generally, they range from moderate to good. In some parts of the Leeton district this fruit is somewhat small, but it is expected to fill as ripening progresses. Quality appears to be pleasing and coloring is satisfactory.

Good to heavy crops of Lemons are in sight at Griffith; the fruit colored early and in some places it has been affected by frosts. It is reported that some good Summer crops are to be seen at Yenda, but they are mainly on low-lying orchards subject to frost and the likelihood of this fruit reaching maturity is doubtful. Several consignments of Lemons were exported overseas during June from the Leeton area, where generally satisfactory yields are in prospect.

Harvesting of Grapefruit is in progress.

On the Murray River sector small consignments of Navels are being forwarded from the Curlew and Barham areas by each steamer leaving for New Zealand. The good crops of Valencias are maturing well, and the fruit should be of splendid quality. Excellent yields of Lemons should be obtained. Harvesting of good quality Grapefruit is proceeding slowly.

Fruit Trees & Fruit Tree Stocks

Splendid Stock of Healthy Plants Available.

APPLES, PEACHES, PEARs, PLUMS, APRICOTS, CITRUS, ETC., PACKED AND DESPATCHED TO ALL PARTS OF THE WORLD.

Overseas Orders receive careful and prompt attention.

Catalogue printed.

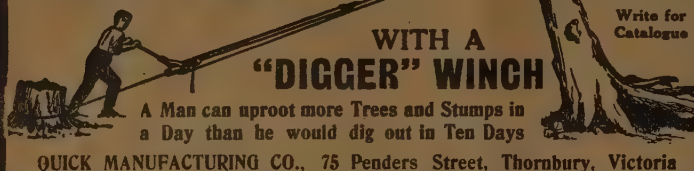
Code A.B.C., 5th Ed.

C. A. Nobelius & Sons Pty. Ltd.

Gembrook Nurseries, EMERALD, VICTORIA

'Phone: Ringwood 171.

GRUBBING



QUICK MANUFACTURING CO., 75 Penders Street, Thornbury, Victoria

Thousands
in Use
It earns its
Famous
LOW PRICE
in a Few Days
Write for
Catalogue

WITH A
"DICGER" WINCH

A Man can uproot more Trees and Stumps in
a Day than he would dig out in Ten Days

... FOR MEN ...

Many men have the impression that a Savings Bank Account is suitable only for women and children, and that it is neither convenient nor dignified enough for business men.

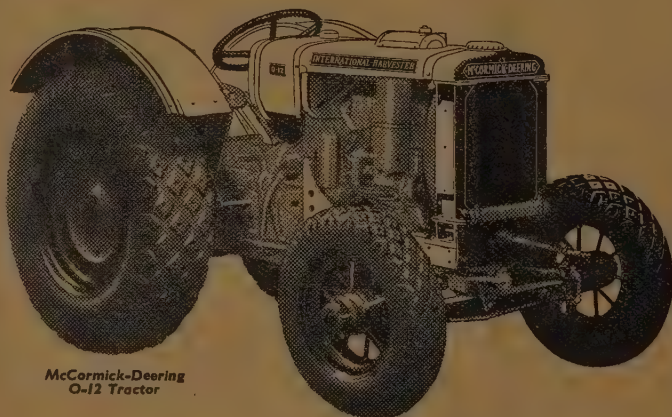
Certainly those business men who have many payments to make over a considerable area need cheque accounts, but even those, in common with all other men, will find the Savings Account a most useful and convenient aid to money accumulation.

There is nothing undignified in the transaction of Savings Bank business, but there is interest profit to be earned on such monies as would otherwise lie idle.

Throughout Australia there are Branches and
Post Office Agencies of the

Commonwealth Savings Bank of Australia
(Guaranteed by the Commonwealth Government.)

McCORMICK-DEERING TRACTOR POWER ...

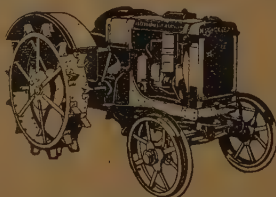


McCormick-Deering
O-12 Tractor

for dependable service in the Orchard

The McCormick-Deering O-12 tractor has been specially designed to help the Orchardist overcome the difficulties associated with work between and at the base of trees. Built low, short and narrow, O-12 can be driven in and out of trees with ease and safety, and is equally effective for belt-work and spraying jobs. Its remarkable speed, from 2½ to 7½ miles per hour, is of great value for haulage on the open road. Other features of the O-12 include replaceable cylinders, high-tension magneto with automatic impulse starter, down-draught carburetion and fuel, oil and air filters.

Write to us for catalogue on this outstanding tractor investment, or see your local agent.



The amazing versatility of the compact, sturdy McCormick-Deering W-12 tractor, makes it of untold value on properties of all sizes. Operates economically on low-cost kerosene fuel.

INTERNATIONAL HARVESTER COMPANY
OF AUSTRALIA PTY. LTD.
(INCORPORATED IN VICTORIA)

543-555 Bourke Street, Melbourne, C.1

G 1903

FRUIT TREE PLANTING

Helpful Hints on Various Types of Fruit Available

Apricots.—Require well-drained and high situation; shaley and gravelley subsoil often produce the best fruit. Unlike other stone fruits, Apricots are spur bearers, hence seldom bear young, mostly growing into a large tree before showing much spur-bearing wood.

Cherries.—These fruits require a cold climate, deep soil, preferably of a light mellow texture (as heavy clay soils are unsatisfactory) with good natural drainage.

Nectarines.—Require similar soil and treatment to the Peach, to which they are closely allied, for the growth and stone are the same, the flesh having a rich aromatic flavor, but skin is smooth and more tender to fungus disease and Brown Rot, though varieties with highly-colored fruits seem to resist the Brown Rot better than others.

Peaches.—Thrive best in good, open loam, thoroughly drained, but will grow in almost any fairly well-drained soil. Early kinds are not suited for canning, as they go soft or mushy too quickly; late kinds, being slower maturing, have a tougher flesh, which keeps well when canned.

Plums (European).—Most of the European varieties only come to perfection in mountain districts, or where the Winter is cold. They require little attention and can endure more hardship as to the soil and situation than most fruits.

Plums (Japanese and Hybrid).—This type is very popular in localities unsuited for the profitable production of many of the European varieties. Mostly prolific and early bearers, handsome in appearance, having a flavor peculiarly their own. The tendency in some varieties to sun scald is more pronounced in humid climates. The modern varieties are a great advance on older kinds, and are now largely in favor for fresh fruit and jam making. (Write Messrs. L. P. Rosen & Son, of Carlingford, N.S.W.)

Persimmons.—Will do in most soils, but thrive best in low, moist situations, the deeper and richer the better. Not suited for localities subject to severe late Spring frosts. Can be pruned hard every year as they bear on the new growth each season. Late kinds color early, and are best left on tree till Autumn, for if picked too soon do not develop their best flavor. New plantations will do better if watered liberally the first season or two and planted deep and firm. The dried fruits are somewhere between Figs and Dates in flavor and quality.

Figs.—Under suitable conditions will bear two crops a year. Thrive best in a warm, dry climate and prefer sandy, loamy soil, well drained, where roots can reach water; on black soils or clay subsoils they do well, but fruit is not so sugary. Require little pruning beyond shaping and thinning out where branches are too thick and dense, and removal of suckers. Figs are easily damaged by exposure, and the roots must never be allowed to dry out, and in planting see that the roots are pruned, and the fibrous roots shorted in closely. In frostless regions fruits will often develop through the Winter and so ripen in the Spring.

Loquats.—Will grow in almost any soil, making a profitable, evergreen breakwind in suitable climates. The safest time to plant is late Autumn, preferably when the weather is dull or raining, as they are very sensitive to drying winds after transplanting, but once established are very hardy. Fruits ripen in Spring. Require little or no pruning, but if choicest fruit is desired, it will be necessary when

heavy crops have set to either thin each individual bunch down to half the number, or else cut a number of bunches out altogether. The thinning of individual bunches will give the finest quality and largest size.

Pineapples.—These are more hardy than is generally supposed, and worth trying in many places along the N.S.W. coast and in other sheltered positions where the full force of Winter frosts is not felt. Plant two feet apart in rows two feet apart, and every seventh row is skipped to leave a path, or else plant 12 inches apart in rows 12 to 18 inches apart, with 6 ft. separating each pair of rows. Do not manure with superphosphate.

Passion Vines.—Thrive best in free, loamy soils in localities fairly free from frost, and can be planted any time except during the cold Winter months. Very quick growing, bearing heavy crops of dull purplish red fruits from 9 months after planting. Largely used as a filler crop in commercial orchards to give revenue before permanent trees come into bearing. Usually bearing two crops a year, the main crop usually ripening in February-March, but by pruning away the fruiting growth in November it is possible to force fruiting laterals for the Winter crop, which is usually most profitable. Plant 10 to 12 feet apart, on trellises 10 feet apart. B. and B. and any quick manures are the best for this fruit. In colder climates they live longer and are slower to begin bearing.

Grape Vines. Before planting, all vines should have the roots cut back to 3-6 inches from cutting, and all broken and bruised roots removed. The top of the vine should be pruned back to the strongest cane, and left so that it has two or three good strong buds. European vines to stake should be planted 6 to 8 feet each way, depending on richness of soil; but for trellis and American sorts, plant 10 to 12 ft. between the plants and 8 ft. between the rows. Prune back to two or three eyes each year.

Currants. Only crop well where there is cold Winter and moist climate. Plant 2-4 ft. apart in rows 5-8 ft. apart, and cut back each year.

Gooseberries. Gooseberries and Currants are natives of cool, moist climates, and are easily injured by too long and too hot Summers, although they are very hardy and withstand low Winter temperatures without injury, but require regular rainfall during Summer months. Good crops only where there is a cold Winter and moist climate. Plant three to six feet apart in rows six to ten feet apart, and if extra large fruit is required cut hard back each Winter.

Loganberries. These are fast growing, thrive best where soil is rich and moisture abundant, but with reasonable attention, will thrive anywhere. Being a Raspberry hybrid, the most appropriate treatment seems to be to train young runners every year, and to cut away old growth that has finished fruiting. Being early flowerers, they are liable to frost injury, and fruits are easily affected by sunscald and high winds. Plant six feet apart on square system, or on rich soils plant six to eight feet apart in rows eight feet wide.

Raspberries. Require a moist location and cold climate with regular Summer rainfall to do really well, but will give fair results in districts not specially suited if well watered during the Summer. Plant two to five feet apart, in rows five to eight feet apart, and cut canes out when they have finished fruiting.

CANNED FRUIT NEWS AND NOTES

Pruning Canning Peaches

Different from Dessert Varieties.

IN OUR LAST ISSUE we quoted Mr. J. A. Ballantyne on pruning the J. H. Hale Peach in the Bathurst, N.S.W., district. Now Mr. W. le Gay Brereton, Chief Instructor of Fruit Culture, states, in the "N.S.W. Agricultural Gazette," that the method described for the J. H. Hale Peach is not likely to prove suitable for canning Peaches. In discussing the pruning of Dessert Peaches he states:—

Dessert Peaches.

Growers of dessert Peaches in districts where the conditions are similar to those at Bathurst should give the method a trial on a few vigorous trees that are still making strong laterals. It should be borne in mind that if, as with other methods of pruning, the setting is heavy, the fruit will need thinning as directed in Mr. Ballantyne's article in order to obtain the desired results.

The objective of the producer of dessert Peaches, on the other hand, is entirely different from that of the producer of canning Peaches. The former endeavours to produce a rather limited quantity of very large Peaches, whereas the aim of the latter is to produce a large quantity of medium size Peaches. Moreover, the Peach tree on the suitable soils of the Murrumbidgee Irrigation Area, with regular waterings, is far more vigorous, can be trained with a greater number of limbs, and is able satisfactorily to mature a far heavier crop than the Peach tree in the Bathurst district without irrigation.

From the foregoing it must not be presumed that the canning Peach, even when grown under irrigation, can be allowed to overcrop, for if this is done, a high percentage of fruit will be under the prescribed canning size.

Other Factors.

At pruning time no one can foretell what the setting of fruit will be, and consequently the pruner must leave rather more fruit wood than is actually required; then, if the setting is good the fruit must be thinned after it is set. In some localities, too, the setting is very frequently reduced by frost, and the grower, when pruning, has to make allowance for this by leaving ample fruit wood. Should, however, the Spring happen to be free of damaging frosts, rigorous thinning of fruit becomes necessary after the setting of the fruit.

The grower, when pruning, and later when thinning the fruit, should remember that a smaller tonnage of Peaches up to cannery size will pay him better than a bigger tonnage with a high percentage of fruit below cannery size, for which he will receive only jam prices.

Treatment of Long Laterals.

The main varieties of canning Peaches now grown will, on suitable soil and under irrigation, develop long yearling laterals. The fruit on the end of such laterals is very liable to become blemished during windy weather.

Long yearling laterals should be shortened. When shortened they will, during the following growing season, generally develop a number of shorter fruiting shoots along the original lateral and closer to its base. When pruning, the following season, the original lateral is shortened, removing one or more of the fruiting shoots as the case demands. If the shortening of the original laterals does not reduce the number of fruit-

ing shoots sufficiently, some can be removed to the closest bud or two nearest their bases. The shortening and removal of some of the fruiting shoots in this way encourages fresh shoots for the following season.

The varieties with a tip-bearing tendency still retain that habit when the shorter fruiting shoots are produced on the original lateral, but as these fruiting shoots are comparatively short and are placed on a firm foundation, the disadvantages of such a habit largely disappear.

It has already been mentioned that laterals should be removed to a bud or two nearest their bases. When pruning quickly, as is necessary, it is difficult to see whether these lower buds are sound or not, and some laterals may be cut to blind buds, which will generally die, leaving dead stubs. All such dead stubs should be removed at the next pruning. If this is done regularly at every pruning, it is no great task to the pruner, but if it is neglected and the stubs allowed to accumulate for a few seasons, it becomes quite an undertaking, and the hired pruner, especially if he is pruning by contract, will mostly shirk it.

Too Many Small Prunes.

The high percentage of small prunes is still causing concern, more especially in districts where water for irrigation is not available.

It is recognised that pruning alone is not necessarily to blame. Soil moisture is the chief factor controlling the size of fruit, but if the soil moisture and other conditions are equal, then the trees carrying the lighter crop will yield the larger fruit.

It is well known that there is a difficulty in maintaining the size of prunes as the trees age, and it is probable that some growers are trying to obtain too heavy a crop from their trees. They are quite likely to defeat their aim, however, as a somewhat lower yield of larger and higher priced fruit might easily net them a better return.

Producers of canning and drying fruit must remember that fruit canned or dried has still to be sold, and competition is so very keen that unless our products are maintained at a high standard we cannot hope to retain our present market.

Cover Crops.

In the drier inland districts all cover crops should be ploughed under by the end of this month. If cover crops are allowed to remain growing late they very quickly deplete the soil of moisture, and should the Spring be dry the trees will suffer and the setting of fruit adversely affected.

There are other reasons why the ploughing under of cover crops should not be unduly delayed. If cover crops are ploughed under too late there is not time for them to rot and give up again the plant food they absorbed from the soil, and thus there may be a shortage of available plant food for the trees in the early Spring. Moreover, the bacteria which assist in decomposing organic matter require nitrogen, and for the time being lock up the available nitrogen (nitrates) in the soil. This is a distinct advantage whilst the trees are dormant, as it checks the loss of nitrates by leaching, but decomposition should be completed by the Spring so that the nitrogen is again available to the trees.

If the orchard were ploughed in the Autumn or early Winter and no cover

Canned Fruits Exports

EXPORTS of canned fruits to various destinations for the present season from January 1 to June 30 are stated by the Canned

Fruits Control Board to have been as follows. The figures quoted represent cases of 2 dozen 30-oz. tins, or equivalent:—

Country.	Apricots.	Peaches.	Pears.	Fruit	Pine-	Total.
	Cases.	Cases.	Cases.	Salad.	apples.	
U.K.	127,831	524,905	353,283	255	15,132	1,021,406
N.Z.	8,326	19,592	1,730	—	1,451	31,099
Canada	3,488	12,628	425	1,014	21,508	39,063
East	1,655	4,306	2,940	826	4	9,731
Misc.	594	962	1,825	95	91	3,567
Total	141,894	562,393	360,203	2,190	38,186	1,104,866

The British Canning Industry

Co-Operating for War Emergency.

ALL THIS TALK of armaments and international upheaval has forced the British Government to organise food production, manufacture and distribution ready for any emergency which may arise at some future date. To this extent only can national safety be justified and greater interest is being now taken in the home production of foodstuffs of all kinds than ever before.

In commenting upon a recent conference between Empire canning interests and the British Government, "Canadian Food Packer" sees in the conference an opportunity for the canning industry that can well be harnessed to local commercial conditions. Their London correspondent, in reporting the conference, applied the situation to Canadian cannery conditions and, as such, the application could be equally made to Australia. He reviews the question in this way:—

From the point of view of Britain's canning industry the talks had the further effect of providing a stimulus towards co-operation. A get-together policy in its ranks is much to be desired, and here was one of the first occasions on which the canners as a whole came together on the basis of a common policy. The present lack of co-ordination is due almost entirely to the great rapidity with which the industry has grown, and to the comparative ease with which small manufacturers can enter the market. At the moment there are between sixty and seventy plants in this country, and the absence of unity was vividly exemplified the other day when efforts to fix a minimum price for processed Peas—an all-important commodity—failed.

The output of British factories runs to something like 800,000,000 cans a year—a small figure when compared with a world output of 12,000,000,000. But although diminutive the industry has in it both the power and the opportunity for growth. The demand in Britain for canned foods is increasing, while in the past year or two the import figures have moved upwards far more slowly than at any time since the industry was established, proving the extent to which the home pro-

ducers are meeting the growing margin of demand. Actually, and notably in the case of early Spring vegetables, Britain is becoming a small but promising exporting country.

There is a moral here for the Canadian exporters. They must not only cultivate the British market as never before, but they must exploit new forms of foodstuffs, particularly those which Britain cannot provide herself.

There is a further advantage open to the Canadian exporter at this moment. The two new opportunities which have been opened to the British producer do not affect the housewife—the largest potential purchaser of the Canadian commodity. One of these is the Government's food defence plan, although its value from the point of view of absorbing the British output must be speculative—for to accumulate too large a reserve of canned foods for an emergency which might not arise would ultimately lead to the flooding of the market with low-priced stores. The second opportunity is provided by the expansion of the fighting forces. Much attention has been devoted by the authorities to the question of adequate catering for the army, navy and air force, and a committee of experts is now drawing up an exhaustive report on the quantity and nature of the diets which should be provided. The report has yet to be finally drafted, but it is known that canned foods will play an important part.

These opportunities will be taken full advantage of by the British producer. Divided though his ranks may be, he has the kind of enterprise which Canada can only match by being more enterprising still.

KYABRAM CO-OP. TO EXTEND.

Record Output Last Season.

In addressing a meeting of suppliers to the Kyabram Co-operative Fruit Preserving Company on July 7, the managing director, Mr. R. H. Gent, stated that the cannery last year exceeded the previous record output by 30 per cent.; 7,120 tons of fruit was processed, representing 10,259,000 cans.

When the new additions, now planned, are completed, at a cost of about £12,000, the company will have facilities for handling about double the normal crop. He saw good prospects for next season, dependent upon conditions in California and the outcome of the trade discussions in London.

crop sown, ploughing can often be delayed with advantage till Spring. On the other hand, if the Autumn or early Winter ploughing were omitted, ploughing should be completed this month in our drier climate, and a few weeks later in regions of high reliable rainfall, or where water can be applied.

Canned Fruit Juices

Pasteurising Apple Juice

IF THE DEVELOPMENT of a simple and cheap method of pasteurising Apple and other clear fruit juices by means of a steriliser machine reported in the latest issue of "Canadian Food Packer" is successful, it will play a tremendous part in solving the surplus fruit crop problem.

Experiments in this direction are being undertaken quietly and thoroughly, and have thus far proved successful.

The apparatus consists roughly of two metal cylinders, five-sixteenth inches apart, with rings that clamp over both ends.

The steriliser is placed in boiling water and juice from the mashed Apples flow through it by gravity. Only a thin layer of juice is permitted to pass through, enabling the juice to be raised to pasteurising temperatures in 11 seconds, ensuring that all the vital elements of the fruit juice are retained.

The juice, being unfermented, has

no resemblance to cider, and going through a quick low-temperature pasteurising process, carries all the tangy taste of a well-ripened Apple. A ton of Apples will produce 120 gallons of juice.

It is estimated that at this rate of production, the grower should receive a profit and the juice could be sold at a reasonable price to the consumer.

Of equal interest is the work being done on the canning of Apricot, Prune, Cherry and Raspberry juices.

The great advantage of these juices is that all the goodness of the tree-ripened fruit, full of the natural flavor, can be placed on Canadian tables in a most convenient form.

Far up on the list for dietetic value stand Apricots, with their high iron content. This juice is produced with suspended pulp in the same form as the present commercial Tomato juice.

Prune juice can be produced this way or as a clear liquid.

Making Modern Tin Cans

A Tremendous Industry

BECAUSE even the Australian public is becoming tin-can-conscious and are slowly beginning to recognise that canned foods are safe, easy to use, as carefully prepared as any other form of food, and can be had out of season and at all times, the ubiquitous tin can is seen in every garbage tin and on all vacant lots, testifying to the almost universal practice of using some form of food from cans.

The average person does not know or overlooks the fact that the tin can industry is one of the great secondary industries and employs, directly and indirectly, many thousands of hands to meet the increasing demand for tin containers.

In U.S.A., where canned foods are probably more popular than in any other country, and from whence more canned food is shipped abroad than from any other country, the manufacture of modern sanitary food cans uses more steel than do railways or

buildings, and ranks second to the automobile industry in the amount of steel which it uses.

The name "tin can" tends to create the erroneous impression that the container is made of tin, but actually it is fashioned from tin plate containing about 98 per cent. steel and less than two per cent. tin. The tin is applied as an outer coating for the steel, chiefly because of its ability to resist the deteriorating influence of atmospheric conditions.

It would be superfluous indeed to attempt to enumerate even a few of the thousands of uses for the tin can. One meets it everywhere and serving every conceivable kind of product and commodity, but perhaps its greatest contribution to modern living lies in the fact that this container, more than anything else, has been responsible for revolutionising the feeding habits of the world.

The tin can industry to-day provides employment for thousands of hands, at home and abroad, and creates a universal distribution of thousands of pounds of capital annually. Nicolas Appert, a French inventor, probably never conceived that he was acting as the instigator of such a tremendous industry when he was conducting the crude experiments which led to the art of canning more than one hundred and twenty years ago.

Keeping step with the increase in consumption of canned goods, production has advanced from the stage when the cans were fashioned entirely by hand and 60 a day was a good output for an industrious workman, to the present time, when a single machine turns out the perfect can at the rate of 300 per minute.

TOTAL CANNED IMPORTS DECREASE.

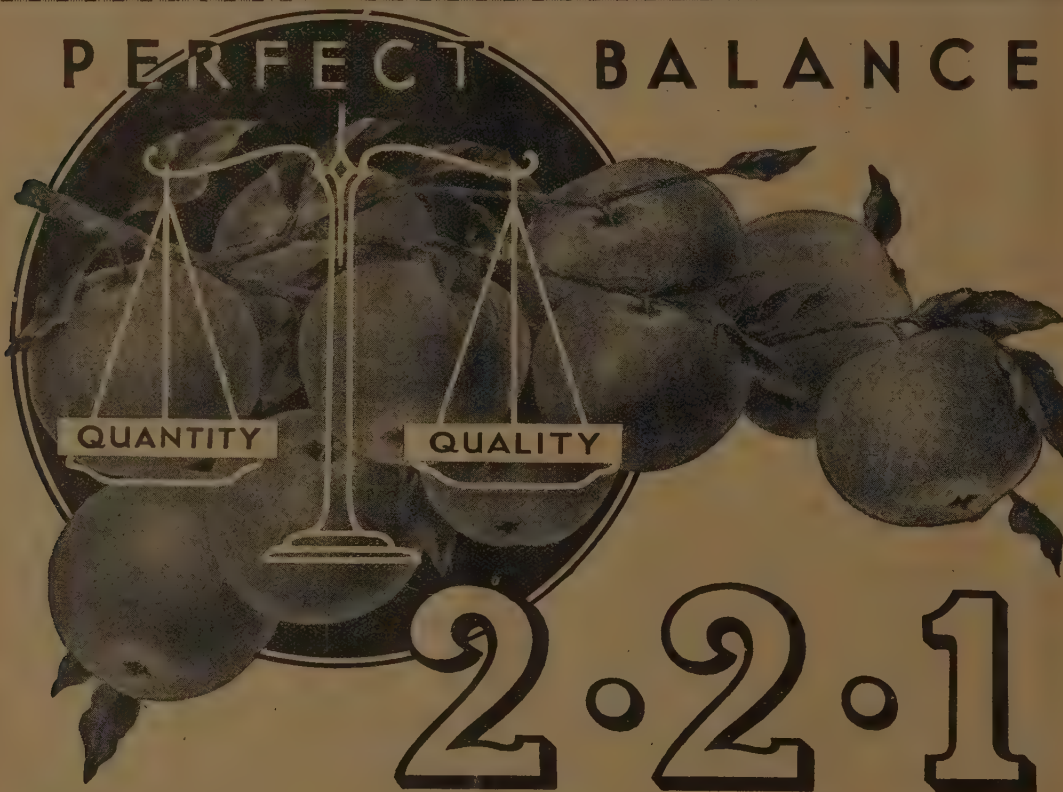
U.K. Figures 11 Per Cent. Down.

ARRIVALS OF CANNED FRUIT in the United Kingdom in the five weeks ended April 30 totalled 1,135,400 cases, a decline of 184,200 cases on the total of the preceding five weeks. There were marked reductions in the arrivals of Peaches and Pears, and receipts of Apples, Apricots, Oranges and fruit salad were also on a smaller scale. The only important variety to show an appreciable increase was Grapefruit, although arrivals of "other fruit" were nearly trebled. Compared with the corresponding period of 1937, total arrivals showed a decline of 11 per cent.

During the five weeks ended April 16, shipments of canned fruit from Australia to the United Kingdom amounted to 262,900 cases, and exceeded those of the preceding five weeks by 210,300 cases. The increase was accounted for by the continued seasonal increase in the consignments of Apricots, Peaches and Pears. Shipments were 21 per cent. heavier than in the corresponding period of last year, the quantity of Apricots sent being nearly four times as heavy as a year ago. Consignments of Peaches increased by 28 per cent., but those of Pears showed a decline of 11 per cent. During the period January 1 to April 16 total shipments showed an increase of 3 per cent. as compared with those of the corresponding period of 1937.

She: "Major, did you get that scar during an engagement?"

Major: "No—the first week of our honeymoon."



★ ITS ANALYSIS—2:2:1 Mixture contains:

8¼% NITROGEN (as Sulphate of Ammonia).
8¾% PHOSPHORIC ACID.
10% POTASH.

GIVES BALANCE—Because 2:2:1 Mixture is so well balanced it gives greatest profit in terms of highest yield of best quality fruit.

AND ECONOMY—2:2:1 means more plant food in every bag. Compare its price and analysis with any other orchard fertiliser. . . .

ALL FERTILISER DEALERS sell 2:2:1 for Spring application to Fruit, Vegetable and Garden Crops because it's so—

Effective and Economical

H 15/36



THE MARKET GROWER

OFFICIAL ORGAN OF VEGETABLE GROWERS' SOCIETY OF VICTORIA. THE KOONDRICK & BARHAM TOMATO GROWERS ASSOCIATION AND THE SOUTH-AUSTRALIAN FRUITGROWERS' AND MARKET GARDENERS' ASSOCIATION.

Vegetable Growers' Association of Victoria

Report of Annual Meeting

President's Address — Wages Award — Membership Increasing — Selling Hours at Victoria Market — Onion Board Poll — Election of Officers — Cultural Hints.

THE annual meeting of the Vegetable Growers' Society was held at the Moorabbin City Hall on Tuesday, July 5. There was a very good attendance of members, representative of many vegetable growing districts; also present were Mr. Tyner, M.L.C., Mr. C. Gartside, M.L.C., Mr. Beet, President of the Southern Fruit Growers, Mr. Aspinall, Secretary of the above Society, Mr. McIndo, the Onion Board representative for the Leongatha and Moorabbin section, and Mr. W. Henderson, Onion Board representative of the Drysdale District. The President, Mr. H. V. Barnett, in his opening remarks, spoke of the very trying period which vegetable growers had passed through during the past twelve months, owing to the very dry period, which had been experienced, and congratulated growers generally on their courage and determination to pull through in time of stress. He said he believed they were the only body of primary producers who had never had to seek Government assistance, and hoped they would continue to exhibit this spirit of independence which our fathers and pioneers had always shown.

He said he felt sure they would if left reasonably free from Government interference and restrictions. He also predicted a very much higher price for vegetables during the months of July, August and September, for it would take till the end of September for crops to mature which had received the benefit of the rain.

Proposed Wages Award.

Many matters of interest to vegetable growers were dealt with. Mr. Tyner and Mr. Gartside both spoke on the question of the proposed Wages Award for the industry, and Mr. Gartside stressed the need of the society notifying members of Parliament that they were not in favor of any award which did not include the whole of the State, and a resolution to this effect, moved by Mr. Marriott and seconded by Cr. Beasant, was unanimously carried.

Too much stress cannot be placed on this condition, for there is only the one clearing house for vegetables, and that is the Queen Victoria Market: thus vegetables grown all over the State found their way there and sell in competition with the produce which is produced within a twenty-five miles radius, which is now the proposed area for the award to cover.

Membership Increasing.

The Secretary reported that a good increase in membership was gained for the year, and that many growers who in the past had not joined the society had this year done so, and he pointed out that the greater our membership the more power we had to bring about desired reforms.

Selling Hours.

A request from the Markets Committee of the Melbourne City Council that the society give an opinion on the proposed alteration of selling hours at the Victoria Market, was discussed at great length. Many growers held the opinion that any later selling hour was detrimental to the state of freshness with which vegetables reached the consumer.

It was pointed out that vegetables exposed to the air soon lost their bloom, and the early morning was the period when there was least damage done in handling this produce; also that it was necessary for the fruiters to be able to purchase his supplies early and get back to his place of business, and although on Saturday morning 4 o'clock starting may seem early, it was necessary to start at this time, particularly when the fruiters were closing their shops at 1 o'clock. The experience of growers was that by 7 o'clock on a Saturday the wholesale part of the vegetable market was at an end, and buyers had left for home.

A resolution moved by Mr. Walsh, seconded by Cr. Le Page "That the vegetable Growers' Society does not favor any change in the existing hours

of selling," was carried, and forwarded on to the City Council.

Onion Board Poll.

Mr. McIndo reported that it was not proposed to hold the poll on the question of the continuance of the Onion Board until the end of September, as this would mean that vegetable growers by this time would have harvested a crop of White Onions. It was resolved to ask the Minister for Agriculture to take the poll not later than the end of August.

Election of Officers.

The election of officers for the ensuing year resulted in Mr. H. V. Barnett being elected President for the third successive term. He thanked members for the great confidence they had shown in him and added that he thought that this office should go round, but he would endeavor to do his best in the interests of the society. Mr. G. Ryan (Wheelers Hill) was elected Vice-President.

Cr. C. C. A. George was again elected Secretary and Treasurer, and the Committee elected were: Cr. E. A. Le Page (Cheltenham), Cr. H. Beasant (Dingley), Mr. J. Mills (Keysborough), Mr. J. Hawkes (Mordialloc), Mr. J. Stocks (Burwood), and Mr. C. James (Heather-ton).

The Onion Advisory Council elected were Messrs. H. V. Barnett, T. R. Marriott, J. Mills, R. Hall, Cr. E. A. Le Page and Cr. C. C. A. George.

Summer was served and a most successful meeting brought to a close.

Cultural Hints.

Now that the young weeds are appearing in crops recently sown, the best use of fine or windy days must be made to run the ditch hoe through the rows. This will loosen the surface and keep weeds in check. Onions which have now struck a good root in the ground are greatly helped by having a harrow dragged across the land. By this means all the soil between the plants is loosened, but of course before raking, the ditch hoe should be run down between the rows.

When the plants start to grow nicely, it will be necessary to keep this crop well stirred with a hand scarifier or drag hoe.

Potato planting is now in full swing and a dressing of super-phosphate, either ploughed in or sown down the rows, will be found of great assistance to Potatoes. This is a manure which is not very generally used by vegetable growers, but could be more freely used with advantage.

N.Z. POTATOES WANTED.

Removal of Ban Sought.

Owing to the present high prices of Potatoes in Australia, the N.S.W. Chamber of Fruit and Vegetable Industries is seeking the removal of the embargo on New Zealand Potatoes coming into Australia. But to meet the removal, the Chamber hopes that N.Z. will admit N.S.W. Mandarins into the Dominion on a reciprocity basis. The argument is used that if 3,000 tons of Potatoes are permitted to arrive per month it will confer no hardship upon growers in Tasmania and N.S.W., whilst the reciprocal trade in Mandarins would be of great value to orchardists.

As against the above report, however, a deputation of Potato growers in Western Australia recently waited upon the Assistant Minister for Commerce (Senator MacDonald) and stated that W.A. could supply all the Potatoes required in the Eastern States, and they felt that the embargo



"Plane" Brand Dusts

"Beauty" (Knapsack) Dusters
"Superior" (Rotary) Dusters

ARE MANUFACTURED BY

N. N. McLEAN Pty. Ltd.
395 Queen Street
MELBOURNE

ROOT ROT OF ONIONS.

Control Methods.

THE FOLLOWING short article upon the above problem is discussed by Mr. A. T. Pugsley, B.Ag.Sc., Assistant Plant Pathologist to the Victorian Department of Agriculture.

The root-rot or bulb-rot disease of Onions is an important problem associated with Onion growing in Victoria at the present time. The losses from this disease appear to be on the increase each year, in some districts one to three tons per acre frequently are affected. As well as this direct loss there is the additional expense (approximately 10/- per ton) of picking over and sorting out the diseased Onions prior to storing. In some cases it is necessary to repeat this process a second time before the Onions are finally disposed of.

The disease is caused by the parasitic soil inhabiting fungus known as Fusarium. The white mould growth of this fungus and the pink spores can frequently be noticed on diseased Onions. The trouble can usually be recognised in the field where affected plants show a yellowish top growth which finally topples over. The roots of such plants are killed so that the plant rests loosely in the soil and may be pulled up easily. Affected bulbs begin to decay at the root end, the rot advancing from the base of the scales upward. The bulbs become soft and the decay may continue until the bulbs are entirely destroyed, leaving only the dry outer shells. The rot progresses somewhat slowly so that many infections unnoticed at harvest time develop later in storage.

Control Methods.

The adoption of adequate sanitation measures is the most important phase of the control methods. The destruction of diseased Onions by fire and a proper system of crop rotation will materially assist in checking the damage. The common practice of cleaning up diseased refuse in paddocks by turning cattle in is strongly deprecated. Growers have also been known to obtain rubbish, including diseased Onions, at the depots and to spread it over the pasture paddocks for stock feed. These practices aid the dissemination of the fungus from infested to clean paddocks and so counteract any benefit derived from crop rotation.

As the trouble is aggravated by wet spells of weather, the gathering of the crop after harvest should not be unnecessarily delayed. Additional precautions are the careful sorting of Onions before storing, and the building of the stacks in such a way that they receive as much air ventilation as possible.

on N.Z. Potatoes should not therefore be lifted. W.A. could supply from 8,000 to 10,000 tons of Potatoes for export outside of the State.

Protect Your Plants

FROM SNAILS, SLUGS, APHIS, AND ALL GARDEN PESTS WITH

PESTEND SUPERFINE

(Tobacco Dust)

Expert gardeners and growers recommend the use of PESTEND SUPERFINE—either for dusting, spraying, or for dressing the soil.

Used in a spray-duster or pressure-gun, PESTEND SUPERFINE adheres better, lasts longer, and costs less than ordinary spraying powders.

PESTEND SUPERFINE Tobacco Dust is non-poisonous to plants, inexpensive and easy to use. Try it out yourself!

Obtainable in 4 lb., 28 lb., and 1 cwt. bags at all produce stores, or direct from W. D. & H. O. Wills (Aust.) Limited.

5869-3-7

PATERSON'S CLENSEL INSECTICIDE AND FUNGICIDE ONCE USED ALWAYS USED

Don't wait until the pests appear, but spray the plants, trees or bushes with a dilute solution of Clenzel Insecticide and water while the pests are invisible in the larvae stage. Repeat at intervals of two or three weeks throughout the season.

Growers adopting this practice find that The Actual Cost is Many Times Covered by the Increased Production, and Gardens and Orchards are maintained in perfect condition.

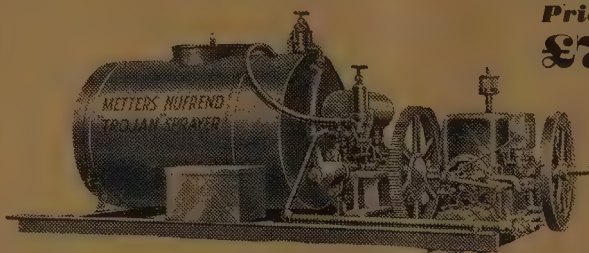
Ring: M1241 for Practical Demonstration

Obtainable from all Seedsmen
and Nurserymen

Sole Agents: GIBBS BRIGHT & CO.,
34 Queen Street, Melbourne, C.I.

Metters' Nufrend "Trojan" Power Sprayer

Price :
£75



SPECIFICATIONS:—2-h.p. petrol engine, speed 500 r.p.m., direct coupled to Nufrend Spray Pump. Galvanised Vat of 50 gallons (approximate capacity), fitted with rotary agitator, mounted on a welded steel frame. The plant is equipped with a Metters Automatic relief valve, suction pot with removable strainer, double cock, 2-25-ft. lengths of 1/2-in. special spray hose, directors and nozzles. The pressure may be regulated and set as required up to 250 lb. CAPACITY:—Pump is capable of delivering 240 gallons of mixture per hour at a pressure of 200 lbs. WEIGHT:—6 cwt. MANUFACTURED BY—

METTERS LIMITED
124 Rundle Street - - Adelaide

For Your Nitrogen

Use . .

Chilean Nitrate of Soda

Guaranteed Purity 98/99% — 100% Efficient.

The Natural Nitrogen Fertilizer

with the

Vital Elements

Sodium - Boron - Iodine - Magnesium

which are actively present in

Chilean Nitrate of Soda

- Completely soluble.
- Immediately available to the plant.
- Prevents soil acidity.
- Promotes vigor.
- Increases yield.
- Improves quality.
- Clean dry and easy to handle.

CONSIDER the very quick effect on growth and the strongly repairing effect on soils.

NOT a Single Grower who has used it has anything but praise for CHILEAN NITRATE OF SODA.

PACKED in 1 Cwt. Strong Jute Waterproof Bags.
ALL MERCHANTS.

AGRICULTURAL SERVICE: G.P.O. Box 2037L, Sydney,
44 Margaret Street.

MARKET GROWER—Continued.

MANURING OF POTATOES DEFINITELY PAYS

AFTER 13 YEARS of manurial experimentation by the N.Z. Department of Agriculture, over a wide range of soils, Mr. A. S. Nash, Instructor in Agriculture in N.Z., goes on record by stating that manuring definitely pays.

During the past thirteen years manurial experiments carried out by the Fields Division over a wide range of soil types have proved conclusively that manuring of Potatoes definitely pays.

On light to medium soils 4 cwt. of the mixture superphosphate 3 parts, sulphate of ammonia 1 part, gives the best return, while on the richer alluvial soils heavier applications up to 5 cwt. per acre can be used profitably. The farming community as a whole has adopted a manurial practice on the lines recommended, and it is rarely now that one finds a Potato-grower who does not fertilize his crop.

Application of Manure.

There are various methods of applying the manure, and Potato-planters are not as common as one would expect. Ploughing in is still largely practised, and has to be resorted to when large seed is planted. Manure-boxes can be obtained to fit on to the back of the plough, but there are still many growers of Potatoes who apply manure by hand either in the furrow or on the ridges just when the Potatoes appear. Under South Island conditions especially the manure needs to be placed close to the seeds so as to give them that initial stimulus which is so important to good development.

Practically every South Island farmer owns a grain-drill that can be used to open up drills and apply manure. These moulders have been used successfully by a Swannanoa farmer for the past two seasons, the advantage being that the manure is put on

exactly and evenly and four drills are opened up at once.

Predrilling manure through every coulter is sometimes practised, but the manure is put on top of the ground and part of it is too far away from the sets to ever be used. In fact, 4 cwt. of super predrilled on the surface is equal to approximately 3 cwt. alongside the tubers. With a drill fitted up in such a manner it is possible to open up 10 acres a day, whereas a planter averages about 3 acres.

Loose Soil Desirable.

In order to enable the moulders to penetrate, the ground must be well loosened beforehand with a stiff tine cultivator. Using a fifteen-coulter drill, the moulders are attached to the front coulters and the manure tubes grouped in threes. The fourth manure spout is blocked, so that the drills are 28 in. apart and the driving is wheel on wheel. The manure goes well down into the furrow and is mixed up with the soil, so that there is no danger of burning the young shoots. Weights attached to the back of the coulters aid penetration, and on some drills extra tension can be applied to the springs by inserting a washer.

On stiff soils it is quite likely that difficulty may be experienced in making the drills sufficiently deep and it may be necessary to follow with a mould plough. Even if this is necessary, farmers should find a drill used in such a manner a quicker and better method than applying manure by hand. The moulders are fitted with a point and they bolt on to the coulters, and they can be made by any blacksmith at a small cost. A fifteen-coulter drill is best, as it allows driving wheel on wheel, while a thirteen-coulter opens up only three drills, and it is necessary to overlap to wheel to get correct spacing.

Final splitting of the moulds to cover the sets has to be carried out with the ordinary moulder.

WILT IN TOMATOES.

Resistant Varieties.

TOMATO GROWERS have often enquired as to what is responsible for "wilt" in their crops. They have observed in some instances that the foliage develops bronze colored spots, with ultimate death of one or more of the shoots. In other cases, the lower leaves turn yellow and the whole plant assumes a general appearance of unthriftness. Then again it has been noticed that brownish spots of a water-soaked nature develop extensively on the foliage and stem, or that the plants fail to produce good quality fruit as a result of abnormal swellings on the root system.

In all such cases, however, the general term "wilt" has been applied by many growers, and when enquiries are made in letters as to what are the best measures of control for the disease, it is often difficult for the Department to provide sound advice. Particularly in this case when the enquiry is unaccompanied by samples of the affected plants.

Wilt Resistant Varieties.

Growers are sometimes persuaded to buy seed of "wilt-resistant" Tomato varieties, thinking that the disease which previously molested their crop will henceforth be of no economic concern to them.

Actually, there are in this State four distinct maladies of Tomatoes which come within the category of

"wilt diseases": Spotted wilt, fusarium wilt, verticillium wilt and bacterial wilt. Each of these maladies is caused by a different type of parasite, so that a variety resistant to one disease would not necessarily be resistant to another.

Only in the case of fusarium wilt are resistant varieties available. Spotted wilt is the most widespread and destructive of the wilt diseases of this crop, and although the small egg and cherry Tomatoes are highly resistant to this particular malady, all commercial varieties are susceptible.

In purchasing seed of so-called "wilt resistant" varieties, it is well for growers to note the particular disease for which resistance is claimed.

POTATO DIGGERS.

Want More Wages.

A report from Daylesford on July 21 states that at a meeting of sustenance workers, resentment was expressed at the payment of 8/- to 9/- per day for Potato digging.

The men concerned were mostly sent to farms by local police officers and claimed that they had to walk long distances to get to their work. The meeting decided to request the Chief Secretary to instruct country police officers not to send men for such work at the above wages. An organisation of such workers was formed, with a President, Vice-President, and Secretary, and affiliation with the Trades Hall is intended.



South Australian News and Notes



INCLUDING OFFICIAL NOTES AND REPORTS FROM THE SOUTH AUSTRALIAN FRUITGROWERS' & MARKET GARDENERS' ASSOCIATION.

The South Australian Fruitgrowers' & Market Gardeners' Association Incorp.

July Meeting of Executive Committee

THE July meeting of the Executive Committee of the S.A. Fruitgrowers' and Market Gardeners' Association Incorp. was held in the Board Room, 288a Rundle street, on Friday, July 29, 1938.

The President (Mr. W. J. Bishop) occupied the chair, and those present were: — Messrs. G. Jennings, F. Hughes, H. B. Robson, N. T. Hobbs, R. A. Cramond, J. B. Randell, R. Hunter, A. Elliott, C. J. Pitt, G. J. Strange, A. J. Hollister, J. G. Potts, J. Turner, G. H. Schultz, L. J. Wicks, M. J. Vickers, I. R. Adams, H. N. Wicks, A. D. Chapman, and the Secretary.

Apologies: Messrs. C. Stanford, E. Giles and C. W. Giles. The minutes were taken as read and confirmed.

Correspondence: (1) Dept. of Agriculture re fruits held in cold storage; (2) Metropolitan Country Board re the use of manure bags; (3) Dept. of Agriculture re Potato Grading Standards; (4) Dept. of Agriculture enclosing copy of circular from the Victorian Dept. concerning Scald in Jonathan Apples; (5) Federal Potato Advisory Committee re representative; (6) Commonwealth Bank re Pool A/c.

Mr. J. Turner moved, supported by Mr. G. H. Schultz, that "Correspondence be received and dealt with." Carried.

Potato Grade Standards: Mr. J. B. Randell moved "That we agree to the Grade Standard Regulation for Potatoes." Seconded by Mr. A. J. Hollister.

Amendment: Mr. N. T. Hobbs moved "That the Potato Section deal with the matter at the earliest possible date." Seconded Mr. A. Elliott. The amendment was carried.

Discussion arose on Scald in Jonathan Apples, and a circular from the Victorian Dept. of Agriculture was read.

Cool Storage Investigation Committee: Mr. W. J. Bishop reported on the meeting held by this committee and which had forwarded a request to the Minister of Agriculture for equipment to be made available at Light Square for the purpose of conducting experiments with fruit supplied by the industry.

Pool A/c.: Mr. J. B. Randell moved "That the Pool A/c. balance be withdrawn and placed into Association funds and earmarked." Seconded Mr. L. J. Wicks. Carried.

Apple By-Products: The deferred discussion on by-products of Apples was again brought forward, and Mr. A. G. Strickland read an article on this matter dealing with the various by-products, namely, dried, canned, vinegar pectin, juices, Cider, Brandy, Confections and Spreads, and stock feed.

Mr. N. Wicks thanked Mr. Strickland for his information, and agreed to table different samples of juices at

the next meeting. He spoke on his efforts as regards by-products, particularly sweet cider. Mr. Vickers spoke on hard cider production in England, and the possibility in Australia for sweet cider. He also instanced America, where in various parts juice from crushed Apples is sold as a beverage.

Messrs. J. Turner and A. Peterson spoke on the poor quality Apples on the market, and thought that the present Regulations should be enforced by the Dept.

Mr. I. R. Adams moved "That the matter be referred to the Apple Section." Seconded Mr. A. Elliott. Carried.

Sectional Reports.

Celery: Mr. G. Strange reported that the Celery position was most satisfactory.

Mr. M. Vickers reported that during his trip around Australia he found S.A. Celery in practically every important town in the Commonwealth.

Tomato: Mr. J. G. Potts reported that the season was just commencing, and that delegates had been appointed to visit Melbourne during the coming week.

Potato: Mr. C. Pitt reported that the Potato position was particularly bright at present, owing to an acute shortage.

Soft Fruit: Mr. F. Hughes reported that during last week he had met the manager and secretary of the Elgin Gas Corp., who were desirous of obtaining supplies of Peaches and Nectarines for England by means of gas storage.

Discussion arose on gas storage, and Mr. F. Hughes moved "That the Elgin Gas Coy. be asked for full particulars as to the erection of chambers here." Seconded Mr. A. Elliott. Carried.

Marion Branch: Mr. I. R. Adams reported that the Almond position was rather chaotic, due somewhat to last years' high prices, which had attracted foreign nuts to Australian markets.

Society: The President presented the report of the Fruitgrowers' and Market Gardeners' Society Ltd., which showed a very satisfactory year's trading.

Finance: Financial statement submitted and received.

Annual Meeting: Mr. N. T. Hobbs moved "That a committee consisting of President H. N. Wicks, M. J. Vickers and A. O. Petersen, deal with arrangements for annual meeting and report to the next meeting of the Executive." The Committee to have power to act." Seconded Mr. L. J. Wicks. Carried.

Water in Torrens: Mr. L. J. Wicks moved "That the Association take such steps as necessary to conserve the water rights of the growers." Seconded Mr. N. T. Hobbs. Carried.

THE PRESIDENT OF THE S.A. FRUITGROWERS' AND MARKET GARDENERS' ASSOCIATION INCORP.

Mr. W. J. Bishop, of Basket Range.

AUGUST 31 will mark the end of the financial year of the S.A. Fruitgrowers' and Market Gardeners' Association, and incidentally, the conclusion of the first year of Mr. W. J. Bishop's term as President.

The Association, ever since its inception, has been most faithfully served by its President, and the services rendered by Mr. Bishop has clearly demonstrated that the confidence placed in him by his appointment as President has not been misplaced.

Being possessed of a pleasing personality, an ability for clear think-



Mr. W. J. Bishop.

ing, and a keen sense of humor, Mr. Bishop has gained for himself the esteem of not only the members of the Association, but all with whom he comes in contact.

His enthusiasm for the industry is infectious, and coupled with his great belief in co-operation, has done much to promote the interests of his fellow growers during the 12 months just completed.

As Chairman also of the Cherry Section of the Association for several years, his efforts on behalf of this Section of the industry has greatly assisted in bringing about the very satisfactory conditions prevailing in South Australia to-day for Cherry growers.

Recently he was appointed as Chairman of the Fruitgrowers' and Market Gardeners' Society Ltd., and here again his co-operative spirit has stood him in good stead. The rapid progress made by this Society during the past few months augurs well for the future, and with a capable Board headed by its equally capable Chairman doing conscientious and untiring service in the interests of the members, there is every reason for optimism and confidence in the ulti-

THE EXECUTIVE COMMITTEE MEETING.

The next meeting of the Executive Committee will be held in the Board Room on Friday, August 26, at 10.30 a.m.

All members are urged to attend, as this will be the last meeting before the annual meeting in September.

The Sub-Committee appointed to make arrangements for the annual meeting and conference will report.

Mr. A. G. Strickland, Chief Horticulturist, will be present to advise on any matter concerning fruit growing.

Routine business will be transacted, together with any other business that may be lawfully brought forward.

W. J. BISHOP, President.
A. STUART, Secretary.

FRUITGROWERS' AND MARKET GARDENERS' SOCIETY LTD.

Annual General Meeting.

The annual general meeting of the above Society will be held in the Board Room, 288a Rundle-street, on Friday, September 3, at 10 a.m.

Business.

Presentation of Balance Sheet, Trading and Profit and Loss A/cs. for adoption.

Chairman's Report.
Election of Committeemen.
Election of Auditors.

Messrs. A. G. Day and A. Elliott retire by effluxion of time but are eligible for re-election.

Nominations for Committeemen other than retiring members must be in the hands of the Secretary not later than August 14, 1938.

W. J. BISHOP (Chairman of Committee).

A. STUART (Secretary).

INSURANCE

.. The ..

F. & M.G. Society Ltd.

Recommend that Growers avail themselves of Insurance benefits with

GENERAL ACCIDENT FIRE AND LIFE ASSURANCE CORPORATION LTD.

Assets Exceed . . . £19,000,000
Claims Paid . . . 85,000,000
Definitely Concessions offered to Shareholders.

A. STUART, Secretary.
F. & M.G. Society Ltd.

Colloidal Sulphur

Established by field trial and scientific tests as the major recent advance in the control of Fungous Diseases of Vines, Orchard Trees and Vegetables

HOWARD'S COLLOIDAL SULPHUR

is better and cheaper than competitive brands. Pamphlets, prices and details of free test offer from the manufacturers:—

R. G. Howard & Co., 27 GRENFELL ST. ADELAIDE

FRUIT TREES

A Quarter Million Quality Trees in Various Stages

THE ONLY NURSERY IN SOUTH AUSTRALIA
— DEVOTED EXCLUSIVELY TO THE —
PRODUCTION OF QUALITY FRUIT TREES

Send for 1938 Illustrated Catalogue

H. N. WICKS

Balhannah Nurseries, Balhannah, S.A.

Royal Melbourne Show

22nd September, to 1st October, 1938

NINE DAYS — EIGHT NIGHTS

Fruitgrowers: Exhibit Your Produce at this Show —
the finest advertising medium in Victoria
for the Fruit Industry.

LIBERAL PRIZE MONEY OFFERED FOR ALL VARIETIES OF FRUIT

Entries Close Saturday, 20th August

WRITE FOR PRIZE LIST.

LOUIS MONOD, Secretary, R.A.S. of Victoria
422, COLLINS STREET, MELBOURNE



No. 9 Spraying Machine

The Most Extensive
Manufacturers in the
British Empire of

RUBBER STAMPS

Stencils, Marking Devices,
Inks & Acme Stamp Pads.

We make a Big Range of Special
Fruit Case Marking Sets

We also Manufacture and Supply
Spraying Machines
for All Purposes.

Let us know your requirements, and we will
quote you. Ask for Spraying Equipment Price List

EXCELSIOR SUPPLY CO. PTY. LTD.

160 Broadway
SYDNEY, N.S.W.

278 Post Office Place,
MELBOURNE, VIC.

"Eco House" 50-52 Victoria St., WELLINGTON, N.Z.

South Australia

(Continued.)

mate growth of this phase of fruit-growing.

Mr. Bishop's interest in his fellow man is not confined to fruit growing alone, for in addition to the duties already enumerated he holds numerous public offices, the foremost of which are President of Basket Range Literary Society, Chairman Basket Range School Committee, member of the Urrbrae Agricultural High School Council, Member of East Torrens District Council, and Vice-President of Lobethal Golf Club. He has also acted in the capacity of Chairman and Secretary of Lenswood Branch of the Agricultural Bureau.

His capabilities in the realm of sport has earned for him the offices of Captain of Lobethal Golf Club, President and Captain of the Lenswood Tennis Club, which duties, however, he has now relinquished.

Mr. Bishop has been a fruitgrower all his life in that picturesque spot in the Adelaide Hills called Basket Range, and grows principally Cherries in which he specialises.

In conclusion, the fruitgrowing industry is appreciative of the services rendered by its President, and looks forward to the completion of his term of office with every confidence for even greater progress.

JUNIOR APPLE PACKING COMPETITION.

Mr. G. Jennings, Past President of the Association, accompanied by the Secretary (Mr. A. Stuart) journeyed to Clarendon on Tuesday evening, July 19, to present the cup won by Dudley Wright, of the Clarendon School in the Junior Apple Competition at the last Royal Show.

The cup, which was presented by the Association, and suitably inscribed, was handed to the winner by Mr. Jennings, who congratulated him and the School, which incidentally, gained 1st, 2nd and 3rd prizes in the competition.

The Secretary supported Mr. Jennings and stated that the cup was another evidence of the interest displayed by the Association in the betterment of the industry.

As the evening marked the presentation of a motion picture apparatus to the School by the Welfare Club, a most interesting and educational evening was spent by all viewing the various films portrayed on the "Silver Screen." One most interesting film dealt with the dried fruit industry on the River Murray. The evening concluded with the partaking of refreshments supplied by the ladies.

HAVE YOU PAID YOUR SUBSCRIPTION?

The financial year of the Association will end on August 31 next, and members who have not yet paid their subscriptions are asked to do so on or before the above-mentioned date.

Your co-operation in this direction will be greatly appreciated.

PROPOSED APPLE EXPORT CONTROL BOARD.

Ninety-eight growers and shippers gathered in the Board Room of the S.A. Fruitgrowers' and Market Gardeners' Association to hear Hon. A. G. Cameron (Acting Minister of Commerce) explain the proposed Apple Export Control Board Bill at present before the Federal House.

Those present were grateful for Mr. Cameron's complete explanation of the Bill and his replies to the numerous questions asked.

Mr. W. J. Bishop (Chairman of the S.A. Fruitgrowers' and Market Gardeners' Association) moved a vote of thanks to the Minister, and was supported by Mr. J. B. Randell (Chairman of the Apple and Pear Section). The motion was carried with acclamation.

Hon. T. Playford (Minister of Crown Lands) presided over the meeting, which was also attended by Mr. R. A. S. Hawker, M.H.R., and Hon. A. P. Blesing (Minister of Agriculture) both of whom addressed the meeting.

MOTION PICTURE EVENING.

Members of the S.A. Fruitgrowers' and Market Gardeners' Association Incorp. were the guests of the Shell Co. of Aust. Ltd. at a motion picture evening in the Shell Theatre, North Terrace, Adelaide, on July 20 last.

A most interesting and educating programme was provided, and during an interval Mr. D. Jones delivered an address on the production and advantages of Shell Spray Oils.

The pleasant social evening was brought to a fitting close by a dainty supper, during which Mr. A. Stuart (Secretary of the Association) supported by Mr. Hughes (Chairman of the Soft Fruit Section) moved a vote of thanks to the Shell Co., which was carried with acclamation by the 150 members present.

Boron in Small Amounts Corrects Apple Disease

Although essential to plant growth, boron is one of the elements needed only in trace amounts, say scientists of the United States Department of Agriculture. In fact, too much boron is toxic to plant growth and too much boron in irrigation water constitutes a major problem in some of the irrigated sections of the west.

In 1931 a German discovered that boron deficiency is the cause of heart rot or dry rot of sugar beets and mangolds. Other scientists found that heart rot of Beets, Turnips, Rutabagas, browning of Cauliflower, and stem cracking of Celery in various parts of the world are caused by boron deficiencies. Investigators in New Zealand associated corky core of Apples with boron deficiency.

Now, scientists of the Bureau of Plant Industry find that lack of boron also causes "internal corking" of Apples in the United States, a nutritional disorder that causes brown corky spots near the core. It is prevalent in both eastern and western United States. They find, further, that small applications of borax or boric acid on the ground within the spread of the Apple tree branches corrects the disorder. One application in the Autumn, or in the Spring at least three weeks before blooming time, is sufficient. One-third pound to one pound of the boron materials to each tree, depending on the age of the tree, is recommended. Because of its toxic qualities, after the first application no more boron should be spread under the tree until the integral cork appears again.

Mid-Murray Notes

Agricultural Bureau Discussed—Pruning Competitions Visitors to Renmark—Seasonal Work

RENMARK, July 20, 1938.

It has always been a source of wonder to me that the other States have not followed South Australia's lead in the establishment of branches of the Agricultural Bureau throughout the various primary industrial area. The Agricultural Bureau movement has been in existence for almost as long as agriculture became of importance to this State, and the amount of good which has been derived from it is incalculable.

Each branch of primary industry is divided into districts representing either agriculture, horticulture, viticulture and dairying, while periodical meetings are held to discuss matters of general interest.

It is usual for a member, or one of the Government advisers to address the meeting, after which a general discussion follows, and it is often in the following discussion that forms the greatest amount of interest in the evening's proceedings; for each grower relates his own experience, or asks pertinent questions of the Agricultural Adviser. Once a year a conference is arranged, embracing the various districts' activities, and at which there is in attendance all the heads of Government Departments who are experts in that particular industry holding the conference. Once a year also, at show time, a general conference is held in Adelaide, which is attended by delegates representing every branch in the State. Any resolutions passed at conference affecting the general welfare of any primary industry is sent on to the Central Advisory Board. This Advisory Board consists of prominent primary producers and Government nominees, headed by the Director of Agriculture, and any matter needing attention is passed on to the Minister for Agriculture. At all times the Government Agricultural and Horticultural Advisers are kept in touch with the activities of the Council for Scientific and Industrial Research, and State Experimental Stations, and in this way the information gained is passed on to branch members at various meetings. The Agricultural Bureau meetings become a medium through which information passes from Government Advisers direct to producers, and therefore becomes a link of great importance. In the agricultural district where crop competitions are held annually, handsome trophies donated to prizewinners, while the millers offer a further prize for the best milling quality for wheat. In this way, yield and milling quality of wheats are improved.

In the irrigation areas perhaps the most interesting yearly event is in connection with the pruning competitions.

When these competitions first commenced it was found that through severe cutting back, competition-pruned vines did not yield as much fruit as non-competition vines. In the course of time, modifications were made in judging to bring the competition vines into keeping with practical fruitgrowing. It can now be asserted that the pruning competitions are based on methods which are in conformity with commercial vine-growing.

These pruning competitions have done a great deal to raise the standard of pruning, and has brought about a better understanding of balance between pruning wood left, and commercial returns to be expected from each variety of vines and trees. The championship pruning competition

embracing the Mid-Murray Irrigation Areas was held at Berri on July 6. For a competitor to qualify for entry for championship honors he must first gain honors in local events and so earn his position at the big event. Three of the competitors gaining highest marks in the local competition gains entry to the championship.

An innovation brought into this year's competition was that of a team's contest, in which five members of each branch represented a team, and the marks aggregated. Detailed results are as follow:—

Vine Section.				
	Currant.	Gordo.	Sultana.	Total
A. Milde (Mypolonga)	90	85	110	285
R. Loxton (Moorook)	88	89	107	284
F. J. Fox (Berri)	90	86	107	283
W. Curtis (Waikerie)	88	86	109	283
R. Isaacson (Waikerie)	89	88	104	281
H. Tucker (Berri)	88	86	104	278
W. Vogt (Mypolonga)	91	87	99	277
S. Loxton (Moorook)	87	87	98	272
J. Andrew (Waikerie)	88	86	97	271
W. Berry (Barmera)	83	80	109	271
M. Lockett (Barmera)	84	84	101	269
G. Rowley (Mypolonga)	86	82	100	268
Possible marks	100	100	120	—

Tree Section.				
	Apricot.	Peach.	Pear.	Total.
F. Battams (Moorook)	89	89	90	268
A. Milde (Mypolonga)	87	90	89	266
R. Fox (Berri)	89	89	87	265
R. Andrew (Waikerie)	91	84	88	263
E. Prosser (Mypolonga)	86	88	88	262
A. Liddicoat (Moorook)	88	86	87	261
W. Boehm (Waikerie)	92	87	81	260
H. B. Pfeiffer (Berri)	89	86	85	260
W. E. Rout (Berri)	88	85	83	256
C. Battams (Moorook)	86	83	87	256
C. Curtis (Waikerie)	85	81	89	255
W. Vogt (Mypolonga)	88	83	83	254
Possible marks	100	100	100	—

The teams' match resulted in the following order:—1st, Moorook, with E. A. Liddicoat, S. Loxton, R. Loxton, F. Battams, C. Battams, with an aggregate of 1,642 marks. 2nd, Berri, with F. Fox, W. E. Rout, H. Tucker, H. B. Pfeiffer, with 1,623. 3rd, Waikerie, with C. Curtis, J. Andrew, R. Isaacson, R. Andrew, W. Boehm, with 1,614 marks. 4th, Mypolonga, with A. Milde, W. Vogt, G. Rowley, E. Prosser, with 1,611.

Results of the individual grand aggregate of tree and vine section are as follows:—A. Milde 551, F. Fox 548, A. E. Liddicoat 542, C. Curtis 538, W. E. Rout, 537, and W. Vogt 531.

Mr. W. H. Chilton kindly made his block available for the competitions, which fact was greatly appreciated by the Committee. Mr. J. J. Odges acted as championship secretary, assisted by Mr. E. R. Moss, secretary of the Berri branch. In commenting on the pruning generally, Mr. E. Leisnerman (Horticultural Adviser, who acted as judge), stated that if was of a very high order, and congratulated Mr. Milde and Mr. Battams on winning the Royal Show Society's trophy for top marks in the vine and tree section respectively.

Visitors to Renmark.

A party of 38 New Zealand tourists visited Renmark, Barmera, Waikerie and Berri during the past week.

The River districts were included in their itinerary because of the general interest taken by former N.Z. tourists in our irrigation areas. The



Wilson's Wonder Walnut tree in third year, at the nursery of Mr. L. J. Wicks, Highbury East, S.A. The man in picture is 6ft. tall.

to make provision for a scheme embracing the whole area, and not attack only that portion showing definite seepage trouble.

Sooner or later, every irrigation area must also be served with a drainage system, either in part or as a whole, and as the necessary money for drainage purposes will have to be found by the Government, it is necessary for each member of the State Parliament to be thoroughly conversant with the relationship of drainage to irrigation.

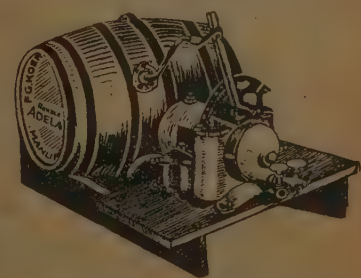
These two matters cannot be dissociated and must go hand in hand. If drainage is delayed too long, the soil becomes chemicalised to such an extent that vines and trees die, and it is then difficult to bring the land back into cultivation, even after drainage has been efficiently carried out. But if drainage is installed before the trouble becomes too acute, there is little loss in production, and the land can be kept in good heart.

When visiting Barmera and Berri, the party will be shown a striking example of the effect of drainage. Where drained and undrained blocks are situated close together, it will illustrate the drained block in good heart, and the undrained block a picture of desolation. Both Berri and Barmera need a comprehensive community drainage scheme, but owing to the different circumstances embracing the Renmark area, the Renmark Irrigation Trust consider that a general scheme is unwarranted at present.

SEASONAL WORK CONSISTS OF PRUNING AND TURNING UNDER OUR COVER CROPS. Everybody seems well ahead of other years in the amount of pruning already done, in spite of the severity of the

Troubles Forgotten

when you purchase an
"Everlasting" Sprayer
No more corrosion or washer troubles.
Always an even high pressure.



Made in one solid gunmetal casting and supplied with 40 or 60 gal. cask or copper tank.
FRED G. KOERNER & LTD. CO.
275 Rundle Street, Adelaide

Winter frosts and bleak winds. Cover crops have not grown quite as well as in former years. In many cases growers have omitted to take the second special irrigation in May and preferred to depend on the Winter rains—which did not come—to carry them on to maturity. However, where the May irrigation was taken, very satisfactory growth was made. In one case a block was planted partly with peas and partly with beans, to gain information regarding the degree of maturity attained by July. Both legumes were planted and irrigated on April 8 and May 24, and by July 10 the peas were in full flower on the warm sandy soil, and on July 20 in the stiffer soil, while the beans have not yet shown a sign of flowering to date (July 22). Beans, however, planted in March 12, and had two irrigations, were fully matured by July 15. To get a cover crop of beans fully matured by the middle of July, it must be planted in March, whereas peas will develop their maximum nitrogen content by the middle

of July if planted as late as April 8. If a cover crop is ploughed under at the end of July, it should be well nitrified by the time the young Spring growth appears on the vines, a time when there is a strong demand by the roots for nitrates. In the event of a cover crop maturing later than the end of July, and ploughing in is delayed until the end of August, the nitrifying process will put a severe drain on the soil nitrates, and as early Spring is also a time when the vine itself requires all the nitrates it can get, it would then be necessary to apply artificial nitrates to ensure that the vine does not go short.

In the past few years growers are not satisfied only to grow a good cover crop to produce nitrates and organic matter, but an intelligent interest is being taken into the TIME these nitrates become available. They have become aware that if a cover crop is ploughed under late, then artificial nitrates must be applied in early Spring to get the best results from their vines and trees.

Applied Nitrogen in Horticulture

The Dominating Factor

(By R. A. Boyle, M.Sc.)

LASTING satisfaction from the manuring of orchard trees and vegetables can only come from the wisely liberal use of the plant food, nitrogen. Crops grown under the conditions of the orchard and garden make a continuous and heavy drain upon nature's own supply of this vital element. All other work is largely wasted if healthy growth is hindered by a short supply of nitrogen. Such a shortage is only too evident wherever one comes across these crops. The leaves proclaim the symptoms in an unmistakable way, and yet they are the factories in which all that makes for quantity and quality in the produce desired is manufactured. Only in proportion to the supply of available nitrogen that the plant can get when it wants it, will that crop ultimately return profits to the grower.

That growers of these crops in Australia are beginning to realise the value of nitrogen to them is evidenced by the truly spectacular increase in the demand for sulphate of ammonia over the past decade, this demand having more than trebled in that time.

There should remain no lack of precedent or example for the inclusion in the fertiliser programme of liberal applications of nitrogen, for these crops; literature from authoritative sources in Australia and throughout the world nowadays abounds in recommendations to this effect; successful users now occur in almost every locality, whilst symptoms of a nitrogen shortage should be well-known to even the most casual observer and the remedy—an application of sulphate of ammonia—so quick and certain to correct it.

Having confirmed the need for nitrogen in these fields by some such simple test as to broadcast sulphate of ammonia amongst the trees or plants and knowing, as we do, that a shortage of nitrogen in a soil under-crop this year will unfortunately repeat itself annually, standard recommendations invariably point to some such regular practice as the following:—

Apply to the soil, each Spring for perennials, and prior to sowing for annuals, a well-balanced compound fertiliser containing the three plant foods—nitrogen, phosphoric acid and potash. Then follow with top or side-dressings of sulphate of ammonia in

order to keep up the supply of available nitrogen, in such quantities or until there are unmistakable signs that a stage of excessive vegetative vigor has been reached.

In setting out to accomplish these recommendations the following points arise for consideration:—

In selecting a suitable compound fertiliser it is well to beware of being influenced by the price per ton. A unit of nitrogen costs about three times as much as a unit of phosphoric acid, so that it is evident that the cheaper the mixture the more of the latter in proportion to the former it contains. However necessary some phosphate may be for these crops, it cannot in any way compensate for a shortage of nitrogen, and if the mixture is relatively cheap because it contains a preponderance of phosphate then it is almost certain that either the crop will remain short of nitrogen or unnecessarily much phosphate may have been applied with consequent unnecessary cost. At least the equivalent of 1 cwt. to the acre of sulphate of ammonia should be applied in the mixture. For fruit trees and garden crops, in general, it would be difficult to imagine a more suitable balance than that presented by the well-known 2:2:1 mixture.

A further point is that nitrogen may be accumulated in the soil by necessary cultural practices other than fertilising—for example, by the incorporation of green manure crops or animal dungs for the purpose of keeping up the humus supply. It will be found by experience that such practices may in the course of time warrant less expenditure on artificial nitrogen. It is always wise, however, to wait for the trees or plants to indicate that this stage has been reached. This leads to a short note of warning, namely one against being influenced overmuch by a fear of applying too much nitrogen. It is possible to create undue vegetative vigor in a plant by overdoing nitrogen applications, but a careful observer should have little trouble in diagnosing even the approach of such a possibility, whilst in any case, for the utmost efficiency, the experience of even the loss of a certain amount of crop due to this event should be actually risked in order to learn the full extent of one's obligations to one's own soil and crop conditions in the matter of their nitrogen requirements.

New Seedling Apple—

“LEGANA”

WE offer for sale scions of this variety raised by ourselves. Appears to be a cross between Delicious and Democrat. Highly colored. Good shape and flavor. Good export qualities. Averaged 15/- per box in Glasgow during current season, 12/5 in London 1937 season. Tree vigorous and heavy bearer.

Five-Bud Scions, 2/6 per doz., post free.

JAS. BULMAN & SONS
Legana - Tasmania

PATERSON'S

CLENSEL

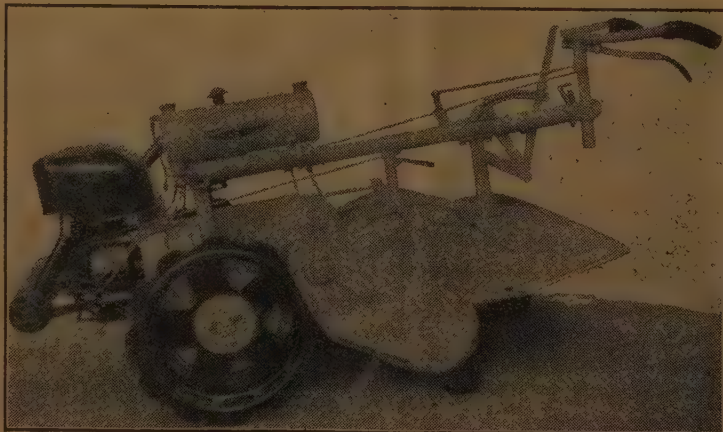
Spray Plants, Trees or Bushes while insect pests are invisible and in the larvae stage.

**ONCE TRIED—
ALWAYS USED**

CLENSEL softens the bark, allows free flow of sap, and gives your trees a good start after pruning.

Obtainable from all Seedsmen and Nurserymen

Sole Agents: GIBBS BRIGHT & CO.,
34 Queens Street, Melbourne, C.I.



THE HOWARD ROTARY HOE

No week ever passes but what brings news of some outstanding result of ROTARY SOIL TILLAGE.

Some profess to take little heed of the expressed opinions of other people . . . but we believe that when such opinions are the truthful result of actual experience they are most valuable.

TAKE THIS INSTANCE!! . . . With his Model "B" he produced a wonderful crop of Beans . . . the talk of the district. HE RAILED 12½ TONS OF CANADIAN WONDER BEANS OFF 2½ ACRES OF THE PEEL RIVER FLATS . . . and the land was infested with nut grass, although he kept it well in check with the Rotary Hoe. He topped the market in Sydney, Newcastle, and Brisbane, and please note . . . his first picking was 7 weeks after sowing!

Name of our Tamworth client on application, also interesting facts concerning many other users, FREE and with pleasure.

EASY TERMS FOR ALL.

ROTARY HOE CULTIVATORS LTD.

Sole N.S.W. Distributors for Howard Auto Cultivators Ltd.
Box 82 P.O. Parramatta Northmead, N.S.W.

VICTORIAN DISTRIBUTORS: E. Hassett & Sons, 626 Bourke St., Melbourne.
S.A. DISTRIBUTORS: Power Plant Ltd., 100 Currie St., Adelaide.

Tasmania

Seasonable Orchard Notes — Buds Showing Well for Coming Crop — Oil Sprays — Overhead Spraying Installations Increasing — Comparative Tasmanian and N.Z. Returns — Question of Russet Tolerance — Discussions re Proposed Control Board.

(By Our Correspondent.)

The Winter routine work is in full swing and many orchardists are well on with their pruning in spite of the bad weather experienced during June. Winter ploughing is in progress in many places. The buds on the average seem healthy in most of the districts that I have visited, and promise well for next year's crop.

Some growers are getting ready to sow the manure, the complete manures seem to be the usual thing now, the phosphorus 2: nitrogen 2: potash 1 mixture apparently is the favorite.

Winter Oil Sprays will have to be applied later in the month and early September. Many growers are cutting out the Winter oiling and putting it in at a reduced strength with the green tip Bordeaux, and even as late as the pink. The

Overhead Spray Systems are becoming more numerous every year, and seem to be giving satisfaction. There may be trouble later from corrosion inside the pipes.

The prices on the United Kingdom market are still keeping up to a payable level, and it is hard to tell from the account sales which are the popular and unpopular varieties. The

It appears that there is a vanishing point beyond which it does not pay to go in quality and get up, the last little bit costs too much to achieve.

From figures I have before me it appears that the N.Z. grower under the Control Board is only receiving 2/11.647 per case for the naked fruit, with a guaranteed minimum of 11/- c.i.f., while Tasmanians, if they had the same guarantee, would get 4/1.67 for the naked fruit, owing, of course, to our obsolete methods, etc., reducing costs. We had better be careful in rushing into a change which will not of necessity be any improvement.

I notice some of the South Australian growers complain, as we do, at the way the Cleopatras were detained by the inspectors on the grounds of mis-shapen fruit, etc. The thing is being overdone, and should be rectified next season or as our South Australian fellow sufferers say, this popular variety will become unpayable. I hope the Apple and Pear Council will take the matter up with the Department, and point out the disastrous financial results to the growers the over-strict interpretation of the regulations. It will be remembered that last year



Spraying Operations in a Channel Orchard, Tasmania. Many orchards have been converted of recent years to the use of central stationary pumping plants and overhead pipes.

be down to between 25,000 and 30,000 by the middle of August, prices should rise in proportion.

I hear that buying for oversea markets for 1939 season has begun already, which is earlier than usual. Let us hope the prices will be better for f.o.b. fruit than last year.

The

Proposed Control Board

is still a controversial subject and the Minister for Commerce (Mr. Cameron) is touring Tasmania and is meeting growers in various centres to explain the proposed Bill.

The main argument used in favor appears to be that it is necessary in order to arrange quotas, etc., but in view of the fact that the Apple and Pear Council has been attending to these matters, the argument does not carry much weight. There is a section of every community who seem to think that any change must of necessity be for the better, while others prefer the evils they know to the possibility of something worse.

Even after hearing Mr. Cameron's explanation of the Control Bill the

growers here are by no means unanimous in their approval of the proposals, the majority appear to be against it. His remarks concerning certain members of the State Fruit Board at Huonville, were, to say the least, unfortunate, and I think, increased the disapproval of the Bill.

"WONGA" KNAPSACK SPRAY.

Easy and Efficient.

In this issue, the Hudson's Stores advertise the new and handy Wonga high-pressure Knapsack spray pump and claim that it is the only hand-lined machine available, also that it is acid-resisting. Amongst other improvements seen in the Wonga is that the valves are made from solid brass and are placed in the bottom of the pump. Pressure can be regulated and the Wonga is easy to carry and gives remarkable results. Readers are invited to inspect the "Wonga" at Hudson's Stores, 655 Bourke-street, Melbourne, or write or telephone them for fuller particulars.



Port Cygnet, Southern Tasmanian Fruitgrowing Area. View overlooking the Port provided with deep-water wharves for interstate shipping. Taken from above Deep Bay looking westward. Lymington and Cygnet orchards on other side of harbor.

Sturmer is once more near the top of the list and Tasmanian fruit seems to be averaging as good a price as New Zealand, and as their expenses are heavier than ours, the net return to the Tasmanian grower seems to be a little better than to the New Zealand grower. They seem to be a little over regulated and apparently it is only the guaranteed minimum price that enables them to carry on. Perhaps we will lose this advantage under a Federal Control Board, as all these organisations seem to increase costs, and if this years' comparative prices are any guide their results are no better than ours, in spite of their expensive organisation, while Tasmania, which we are continually being told is un-organised, is ahead in net returns to the grower, owing to our cheaper methods.

the russet tolerance on Cleos, and Grannies was cut down. I pointed out at the time that this would deter growers from spraying to some extent for fear of russetting the fruit, with the inevitable result that the fruit will become affected with late (Autumn) Black Spot whenever there is a damp Autumn. Thousands of bushels were condemned by the inspectors this year from this cause. This regulation has a serious effect on the cleanness of the crop, owing to the fear of russetting the fruit with the spray. Which is the lesser of the two evils, a little russet or the risk of a lot of Spot whenever weather conditions are against the grower?

The supplies of fruit going forward to mainland markets are getting smaller each week, and will probably

PACKING CHART FOR GRAPEFRUIT IN THE CALIFORNIAN EXPORT CASE.

24 x 11½ x 11½ Inches Inside Measurements, Clear of the Division.

By Basil P. Krone, Chief Fruit Packing Instructor, Vic. Dept. of Agric.

In view of the possibility of Grapefruit being exported from Victoria to Malta, New Zealand, or the East, it has been deemed advisable to publish this chart in order to maintain the standard in the presentation of Victorian Grapefruit.

Approx.

Size.	Pack.	Layer.	Layers.	Total.	Remarks.
3½	3-2	3 x 3	5	150	The smallest size for export.
3½	3-2	3 x 2	5	126	
3½	2-2	3 x 3	5	120	Stylar ends face upwards. Pack more loosely than usual. Frequently small 3½.
3½	2-2	4 x 3	4	112	
3½	2-2	3 x 3	4	96	
3½	(2-2)	3 x 2	4	80	Sometimes small, 4 inches. Stylar ends face upwards.
4	(2-2)	3 x 2	4	80	
	(2-2)	2 x 2	5	80	
4½	2-1	3 x 3	4	72	Where not indicated the fruit should be packed on its cheek to ensure efficient height in the case.
4½	2-1	3 x 3	3	54	
4½	2-1	3 x 2	3	46	
5	2-1	2 x 2	3	36	
5½	2-1	2 x 1	3	28	

Note.—It will be noticed that while the counts are in rotation the layer counts are not so. This is caused by the stylar ends facing upwards in some of the packs.

The bulge should be two inches or even more above the top of the case at the centre, but not more than about an inch at each end.

The bulge is formed by loosening the pack slightly at each end of the bottom layer and "nesting" the fruit a little more deeply than the others in the larger spaces thus formed. The fruit is then gently pressed down at the ends of each layer, but not in the centre.

"SOMETHING NEW — SOMETHING BETTER"

WATCH in our future issues for full information regarding the KARRYBETTA FRUIT TRAY, the KARRYBETTA FRUIT CASE and the BETTA PACK FRUIT STORAGE SHED.

Motor Cars, Trucks, Tractors

BRAKING EFFICIENCY

Chief Governing Factor is Not Generally Understood

The chief factor that governs braking efficiency of motor vehicles is not understood by quite a large number of drivers. The problem of braking any body in motion is mainly a question of converting energy into heat by means of friction. The first essential is a high resistance to slip between tyre treads and the road surface.

This "coefficient of friction" or adhesion between the tyre and surface of road sets a very definite limit to the maximum braking possible, according to the condition of the treads of the tyres, the road surface and weather conditions.

If a motor vehicle has all its wheels locked and is then pulled along a level road, the force necessary to move it is in proportion to its weight. Thus, if a pull of 500 lb. is necessary to move a vehicle weighing 1,000 lb., the coefficient of friction is said to be fifty per cent. With a wet or greasy road surface and worn tyre treads, the force to move the vehicle is much less, and the coefficient may be as low as twenty per cent. On the other hand, dry average tar-macadam road affords about sixty per cent. to seventy per cent., with well-defined patterned tyres.

The suspension system of all motor vehicles has, as its chief object, the maintenance of contact between the tyre and the road, and anything which tends to reduce the pressure and adhesion has a bad effect on the road-holding qualities of the vehicle. In this category, the arch enemy is the tyre with its tread worn to a polished smoothness. No automobile with tyre treads in this condition can be relied on to provide adequate resistance to slip on a wet or greasy surface. Obviously with two smooth surfaces in contact, there is little adhesion when brakes are applied, and frequently lack of steering control.

When brakes are only about twenty per cent. efficient, on account of smooth tyres, it is inviting trouble to drive at any great speed on wet bitumen faced roads, particularly just after a light shower on top of a dusty surface, yet quite a fair percentage of motor owners, including drivers of fast, weighty sedans, appear satisfied to accept the hazards definitely associated with this practice. Apart from the non-safety aspect of driving on smooth tyres, the motor owner will find that his vehicle is more efficient on non-skid tyres, on account of more engine power being transmitted through the wheels, owing to absence of wheel slip.

WARM UP QUICKLY.

Reduce Engine Wear.

Use of Winter Oils.

In the Winter, always warm up the engine quickly. It should never be allowed to tick over slowly immediately after being started. Research has shown that engine wear is to a substantial extent caused by corrosion, which can only take place when an inadequate oil film exists on the cylinder walls.

Rapid oil circulation is imperative when starting up from cold, the idea being to get the oil transferred from the sump to the topmost part of the cylinders as quickly as possible. With a Summer grade of oil in use in Winter this process actually takes a period of anything up to seven or eight minutes. The use of a light, free-flowing Winter-grade oil reduces this time considerably, enabling a protective oil film to be quickly formed, and cylinder wear is therefore greatly reduced.

To warn motorists of the danger of starting wear in the Winter months, the Vacuum Oil Company is conducting a campaign which advises the drainage of Summer oil from the crankcase and refilling with the recommended grade of Winter Mobiloil.

Free-Flowing Oils Best.

Apart from wear, there is also the problem of avoiding sluggish starting in cold weather. It should be remembered that the modern motor car engine is built to extremely fine working clearances. Research has contributed a great deal towards solving cylinder wear problems, so that engines remain "tighter" for longer periods than hitherto. All these improvements tend to increase the starting load, and when too heavy an oil film exists between cylinder walls and pistons the difficulty of starting becomes a grave problem. Tremendous improvements used in refining certain lubricating oils have created entirely new standards of fluidity, so that it is now possible to obtain Winter oils that are free-flowing at low temperatures, and that give correct lubrication at the higher temperatures of engine operation. Such oils ensure easy starting and thorough protection against starting wear.

CARAVAN NOTES.

Although the average car will tow a trailer satisfactorily, certain precautions should be taken because of the increased loads imposed, not only on the engines, but also on the car chassis, transmissions, clutches, tyres, springs, cooling system, brakes, etc.

In some cases relatively small cars are used to tow trailers, and whilst their engines may develop sufficient power to suit the requirements, the overloads imposed on the various other components mentioned above make it essential for the car operator to always remember the limitations of his car and the necessity of studying the servicing, maintenance and lubrication requirements. Even with the heavier type of cars, the increased stresses imposed when towing a trailer should not be lost sight of by the operator, and again it will pay to study the problem from this aspect.

For towing trailers the tyres of a car should always be kept in first-class condition, and in fact, to ensure reliability and reasonable tyre life, oversize tyres should be fitted in many instances.

Quick Facts about—

1938 CHEV. UTILITIES

WE DON'T WANT to appear abrupt, but we believe busy truck men would like to know the highlights of 1938 "CHEVROLET" utilities.

Here they are:

12 cwt. and 15 cwt. capacities. 112" wheelbase. 85 h.p. high compression, Valve-in-head, 6-cylinder Engine. New Diaphragm Plate Spring Clutch for smoother, quicker response, more positive in action, and easier in operation. Redesigned Valves and Guides with greatly increased cooling area for faster dissipation of heat away from combustion chambers. Electroplated Cast Iron Pistons, Four-bearing Crankshaft, Full length Water Jackets, Ventilated Generator, perfect Lubrication. Improved Electrical System, including new starting mechanism with over-running Clutch and Automatic Throttle Advance for sure, quick-fire starts. Improved automatic Down-Draught Carburetion. Perfected Hydraulic extra-powerful Brakes. New Rear Spring Attachment to the rear axle housing for smoothness and stability. Easy-riding Springs maximum length. Chassis Frame of Box Girder Construction on the 12 cwt. capacity. Channel Steel Frame on the 15 cwt. capacity. Synchro-mesh Gears. Full Tool Kit. Holden all-steel Coupe front Utility Bodies, with Panel Vans. Every type of Body required available for individual service. All Bodies designed to give maximum loading space.

1938 "CHEVROLET" Utilities are now on display—inspect them to-day. Demonstration gladly arranged. Prices from £239. (Plus Tax).

CHEVROLET—Public Favourite No. 1.

PRESTON MOTORS PTY. LTD.

114 Franklin St., Melbourne, C.1. F3621.

Head Office:
104 Russell Street.
Melb. C.1., C9200



CHEVROLET AHEAD IN CARS.

758,206 in 1937.

In eight of the eleven years that has elapsed since the last model T Ford was released, Chevrolet cars have taken first place in domestic passenger car sales, states Mr. F. H. Mee, advertising manager of Preston Motors Pty. Ltd., in Melbourne, whilst the enormous number of 181,212 Chevrolet motor trucks were sold in 1937, in spite of a factory strike in U.S.A. holding up production during January to March.

Chevrolet cars represented 22.1 per cent. of all passenger cars sold in U.S.A. in 1937, and Chevrolet trucks similarly represented 29.7 of all trucks.

An interesting story is told by General Motors Corporation, makers of many of the best-known cars to-day. In 1918 the Buick Company sold 77,691 units, but in 1937 that number had risen to 227,038.

WHIRRING STARTER.

Neglect of Correct Spark Plug Gaps a Cause.

Too long and too often is the whirring of the starter motor heard when the thermometer is low, not because of the inefficiency of the engine, but because of the neglect of the owner to give sufficient attention to the sparking plug gaps.

It is not generally appreciated by the average owner that in the process of time the electrodes gradually burn away and so increase the width of the gap that the spark is required to jump. Although this increase in width may only be a few thousandths of an inch, it will seriously affect the ignition system, and throw an extra strain on the coil or magneto. The correct space between points is eighteen to twenty thousandths of an inch, according to the make of plug used, and all car owners should periodically test or adjust the gap width so that no undue demand is called for from the battery.—"Farmer and Settler."

Citrus News and Notes

WASTAGE IN CITRUS

THREE TYPES

THE PRODUCTION of Common Oranges (Parramattas, Joppas and Silettas), are not of much importance in the field of Australian Oranges, the chief Orange varieties being Washington Navels and Valencias. Grapefruit, Lemons and Mandarins (mainly Emperor) are also grown extensively in all States, though N.S.W. produces approximately 60 per cent. of the total Australian production of five million bushels of citrus fruits.

In experiments on storage, a diversity of storage behaviour has been found between inland, irrigated and coastal areas. Less than 10 per cent. of Australian citrus fruits is exported, principally to N.Z. That exported to Great Britain in recent years has shown a high wastage, though carried in refrigerated space. One of the main types of wastage is described in the latest Journal of the Australian Institute of Agricultural Service.

Types of Wastage.

In stored citrus there are three major types of wastage:

1. Fungal wastage, rots and spots of various types.
2. Physiological rind blemishes, principally due to low temperature injury.
3. Blemishing and deterioration in condition due to loss of moisture from the fruit.

Also, in long storage, decline in palatability and staling of the juice often become important.

(1) Fungal Wastage. In Australia, the common green mould (*Penicillium digitatum*) is the most important. This is a soft rot, in the later stages usually involving the entire fruit and forming olive-green powdery masses of spores on the surface. The blue mould (*P. italicum*) also occurs but, except in isolated cases, is only of small importance; it, however, is more common on Mandarins than on Oranges. Both of these moulds are wound parasites, and grow rapidly at favorable temperatures.

Stem-end rots are next in importance. These are firmer, somewhat pliable rots beginning as a gradual discoloration advancing from the stem-end in various shades of drab and brown. They will eventually involve the whole of the fruit, but are much slower developing rots than those caused by the green and blue moulds.

A black centre rot also occurs, but is more common in Mandarins than in Oranges. It generally proceeds down the centre of the fruit with little or no external evidence of its presence. Sometimes in Navel oranges *Alternaria* infection takes the form of a navel-end rot. This latter rot commonly occurs on the tree and causes the fruit to color and drop prematurely.

Button rots occur during storage at higher temperatures, and after cool storage at temperatures of 45 deg. F. and below. These are minor rots at the stem end, which are distinct from stem-end rots as they do not spread laterally through the rind but are confined superficially to a small area around the button. They often penetrate deeply into the fruit down the central vasculars.

In addition to definite rots, fungi may cause spots on the rind. In severe cases, generally as a result of secondary infection, these spots may become somewhat rotted.

Those of principal importance are black spot and Septoria spot. Black spot is primarily an orchard disease,

but will develop in store at favorable temperatures and often develops and increases greatly between picking and marketing. It is one of the most serious diseases on fruit in the coastal districts of New South Wales, principally affecting Valencias as this variety matures during the Summer when temperatures are favorable to its development. Typically, small reddish brown spots appear on the rind; these later sink, enlarge and become almost black in color. In severe cases, the lesions are more irregular and more brown in color, much of the rind surface often becoming involved.

Septoria spot is very similar to black spot in its symptoms and behaviour after picking; it also is primarily an orchard disease but principally attacks Navels. Black spot is of serious importance in New South Wales and Queensland coastal areas, whereas Septoria spot is most severe in the Murray Valley, and has not been recorded from the above coastal regions.

(2) Physiological Rind Blemishes. Of these, storage spot is the most important. It is similar to the rind disorders in stored fruit referred to by workers in other parts of the world as storage pox or pitting. It occurs almost universally on Oranges and Grapefruit stored at relatively low temperatures. Storage spot consists of discolored areas on the rind, generally more or less sunken and more or less irregular in outline. The color of the lesions may range from light honey colored to dark brown. These spots are firm and dry and usually involve only the outer portion of the rind. They may occur anywhere on the rind, but are often most commonly situated at the stem end around the button. In Australian work this disorder has been separated into two classes, button storage spot, and lateral storage spot, as in the former fungi have been found to be involved and thus it may not be entirely physiological in origin. The latter seems to be wholly physiological as fungi have not been isolated from these lesions.

Storage spot is most common at temperatures from 37 deg. to 45 deg. F. At lower temperatures, cold injury takes another form, which is commonly called cold scald.

Cold scald takes the form of a relatively large superficial or slightly sunken area which is lighter in color than typical storage spot and, by comparison, is not sunken. It often has a slightly pitted appearance within the lesion. It is not of great commercial importance as in commercial storage and overseas carriage the temperatures range from 38 deg. to 42 deg. F., which are above the temperatures at which cold scald develops. The appearance of cold scald is a sure sign that the fruit has been subjected to temperatures approaching freezing point.

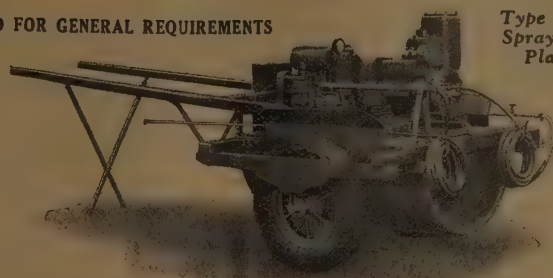
(3) Moisture Loss and Wilting of the Fruit. After picking from the tree, moisture lost from the fruit as a result of its normal life processes is not replaced, and this loss soon becomes manifest in the development of a wilted, unattractive appearance. Under certain conditions the fruit may also develop discolored desiccation blemishes on the rind.

(4) Loss of Palatability. The palatability of an Orange is the result of the combination of taste and flavor. The acidity and sugar content, to-

For BETTER SPRAYING IN HALF THE TIME USE RONALDSON-TIPPETT EQUIPMENT

There's a Size and Type of Plant for Every Orchard

SUITED FOR GENERAL REQUIREMENTS

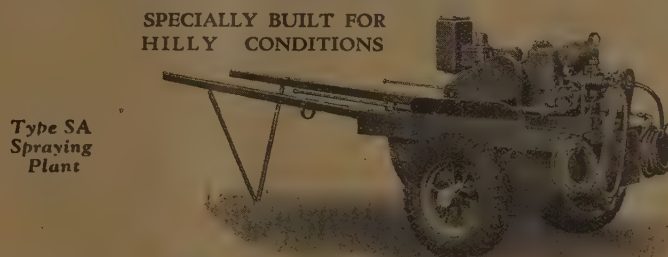


Type FN
Spraying
Plant

ARE YOUR PROFITS DWINDLING IN THE FRUITGROWING BUSINESS?

THEN fight for better returns, and bigger profits with modern Spraying equipment. We will finance you to purchase a Ronaldson-Tippett Spraying Plant that will pay for itself in one or two years . . . a plant that enjoys the largest sales in the Commonwealth because of its outstanding design and quality. You can't afford to carry on your fight against fruit disease and low profits without the backing of a Ronaldson-Tippett Spraying Plant to ensure success. Any of these plants can be fitted with steel wheels or pneumatic tyres as required. Write for full particulars of the size and type of plant in which you are interested.

SPECIALLY BUILT FOR
HILLY CONDITIONS



Type SA
Spraying
Plant



IDEAL FOR
THE
LARGE
ORCHARD

Type FN
4-Wheel
Spraying
Plant

RONALDSON BROS. & TIPPETT PTY. LTD.

Head Office and Works: 237 Creswick Road, Ballarat

Showrooms: 628 Bourke St., Melbourne, C.1.

INTERSTATE DISTRIBUTORS:

Horwood Bagshaw Ltd., 34-35 Young St., Sydney, N.S.W.
Alfa-Laval Separator Co. Pty. Ltd., 299 Sussex St., Sydney, N.S.W.
Engineering Supply Co. of Aust. Pty. Ltd., Charlotte St., Brisbane, Qld.
Australian Estates Co. Ltd., 100-108 Creek St., Brisbane, Qld.
Implement Company, 88 Grenfell St., Adelaide, S.A.
Westralian Farmers Ltd., Wellington St., Perth, W.A.
McLean Bros. & Riggs Ltd., 104 Murray St., Perth, W.A.

RONALDSON - TIPPETT

(Continued on page 26)

CITRUS NEWS AND NOTES—(Continued)**ORANGES FOR NEW ZEALAND.****Grading Regulations.**

The recent decision of the New Zealand Government again to permit, from certain prescribed districts, the importation of Oranges from New South Wales will doubtless result in the shipping of considerable quantities this season. It is very important, however, that the greatest care be taken to ensure that the fruit forwarded is of the highest standard. A circular issued by the Australian Citrus Advisory Council lays down the following specifications as to grades:—

(a) The outer layers or shown surfaces of the Oranges shall be a true indication of the contents of each box.

(b) Each box shall contain one variety of Orange only.

(c) No Orange intended for shipment to New Zealand shall measure less than 2 inches in diameter.

(d) Oranges shall not be dry. They shall be mature, of normal shape and appearance common to the variety, sound, and of reasonably even color, and shall have been clipped from the tree.

Wastage in Citrus Fruits.

(Continued from page 25)

gether produce the taste, and the degree of Orange flavor possessed by the fruit is due to the presence of certain, as yet unknown, volatile constituents. In addition to normal Orange flavor, stale and "off" or foreign flavors may develop in store. It has generally been found, however, that fungal wastage and rind disorders set a limit to the storage life before loss of palatability becomes important.

THE LONDON MARKET.**Report for June.**

The latest report from the Imperial Economic Committee gives market conditions during June as follows:—Arrivals of Summer Oranges at U.K. ports since the beginning of the season totalled 1,540,000 boxes, as against 642,000 boxes in the same period last season and 1,085,000 boxes in 1936. California provided 598,000 boxes and Brazil 807,000 boxes. South African supplies were 135,000 boxes, as against 63,000 boxes last year, therefore the present season proves that more Oranges are being consumed in Great Britain and testifies to the increased spending power that is corroborated in many other ways.

In the last week of June, 112,000 boxes of Oranges came from South Africa, 92,000 from Brazil, and 83,000 from U.S.A. Grapefruit arrivals included 11,000 boxes from South Africa, 4,000 from U.S.A., 16,000 from Brazil and 7,000 from British West Indies.

Home-grown soft fruits were in good demand. Imported Apples maintained firm prices. Pear prices improved. South African Grapes remained active with a slight price drop. Moderate demand for Belgian Grapes, but English hot-house varieties were slow.

Little Tommy: "It's funny mummy that you tell me at night I'm too small to stay up, and in the morning you tell me I'm too big to stay in bed!"

South African Citrus Exports**Big Expansion Since World War.**

THE EXPORT OF CITRUS fruit from South Africa to Britain has shown an uninterrupted expansion since the world war, rising from an annual average of 323,000 cases in 1920-24 to 4,108,000 cases in 1937. Last year the increase was 1,424,000 cases, bringing the total to 4,108,000 cases, or 53 per cent. increase on the previous record year in 1936. Lemons contributed 41,000 cases and Tangerines 10,000 cases.

The following table shows how the increase has been maintained since 1920, expressed in 1,000 cases.

Year.	Oranges.	Grapefruit.	Lemons.	Tangerines.	Total.
1920-24 (average)	279	10	—	34	323
1925-29	734	37	1	37	809
1930-34	1,852	191	15	18	2,076
1935	2,089	284	36	12	2,421
1936	2,306	327	40	11	2,684
1937	3,691	366	41	10	4,108

CONTROLLING WASTE IN ORANGES.

WASTAGE IN CITRUS FRUIT by stem rot and pencil mould can be controlled by a new method reported by the Bulletin of the Bureau of Fruit Production.

A new method has been evolved which markedly controls wastage in citrus caused by diploia stem-end rot. The method is to place on the stem end by means of a pipette a drop of a disinfectant composed of 13 g. iodine, 10 g. potassium iodide, water 200 c.c., alcohol 800 c.c. Other disinfectants were also tried with somewhat contradictory results. The method is quick and inexpensive, and suitable for large-scale shipping consignments. At present, however, there is an embargo on the entry into the United Kingdom of fruit treated by such substances.

IMPERIAL FRUIT SHOW.**Schedules Available.**

The Department of Commerce has received class schedules and entry forms for the Imperial Fruit Show and Cannery Exhibition, which this year is to be held at Bristol, England, from October 28 to November 5.

The Australian products which may be entered for competition include honey, citrus fruits, Apples, canned produce, and fruit juices.

The pure fruit beverages section, which was added to the show last year, is being continued and the citrus and Grape juice classes are open to competition for Australian exhibitors.

Last year there were seventy entries from Australia, which constituted a record for this country and considerable success attended many of the entrants.

It is hoped that the Imperial Fruit Show will be supported equally well this year by Australian firms, for it provides an excellent opportunity to demonstrate the high quality of the Australian product in competition with that of other Empire countries.

Entry forms and full particulars are obtainable from the Department of Commerce, Canberra, where entry forms must be lodged not later than August 22, 1938.

SURPLUS FRUIT FOR STOCK.

That surplus fruit can be fed to horses, cows and sheep, but that pigs will best clean up the bulk of the waste fruit, claims a writer in the "Castlemaine Mail." Morrison, in "Feeds and Feeding" states that horses relish fresh fruit and slightly injured fruit can be fed to them with safety.

Apples have also been profitably fed to dairy cows. Practical men state that, when fed to milking cows Apples dry up milk, due to too much acid. More probably the failure of cows to maintain their milk yields, when fed Apples, is due to failure to supplement the Apple ration with sufficient protein. The addition of 4 to 5 lb. meat meal to 100 lb. Apples would make up the deficiency of protein.

Experiments by Hackedorn, Satola, and Bear, comparing maize silage with culled Apples, Potatoes and Carrots as supplementary feeding to wheat and lucerne have for fattening lambs showed that the lambs receiving Potatoes made the most rapid gains, but were very closely followed by the lambs receiving Apples and those receiving Carrots, with the lambs receiving maize silage ranking last.

Phone: Epping 96. After hours: Epping 58.

ESTABLISHED 1901.

FRUIT TREES

Large quantities in all leading varieties. Our trees this season are exceptionally sturdy and well shaped, without any blemish or marking. Early booking is advisable for later delivery. Large quantities of Peach stocks and Lemon stocks.

CATALOGUE
FREE
on
Application.

KUNDE SECATEURS, BUDDING AND GRAFTING KNIVES AVAILABLE.

L. P. ROSEN & SON

'Fernhill Nurseries,' Pennant Hills Road - Carlingford, N.S.W.

ARE YOU

GRUBBING?

Previous experience had convinced me that to be really efficient a grubbing machine should have ample power and ropes that will meet the heavy demands required of them. I found that shovel and axe work is very costly either by itself or in conjunction with a machine. The machine that offered these features with a host of others, was THE "MONKEY" GRUBBER.

It gave me the power of 260 pairs of hands in a simple and compact form; the lever is short, so that I am able to stand firm-footed and get the full stroke. There are two speeds in the machine, as well as an automatic release that allows me to let off a strain, or as the machine will work in any position, it comes in for all jobs that would require a chain block. It is taken to the job on a pair of wheels like a barn truck, and is rigged for work in a few minutes. The ropes are in lengths that I find easy to handle, and each one is fitted with hook and loop couplings, so simple and absolutely IT for effectiveness. The makers have included a sturdy snatch block with a novel method of securing to the ropes, and also a fine type of firm gripping rope shortener. The latter makes it very easy to accommodate the lengths of rope to the tree or stump being pulled, and is quickly released from the rope. The combination of so many time and labor saving features makes the "Monkey" Grubber a superior grubbing outfit.

REMEMBER FOR YOUR GRUBBING THERE'S ONLY

H. H. HINDS,
225 Clarence Street,
Sydney.

A. G. WEBSTER,
& SONS,
Hobart & Launceston.

TREWHELLA'S



MONKEY GRUBBER

REX ROBINSON,
83 Gipps Street,
Brisbane.

Leading Stores and
Merchants, South and
West Australia.

TREWHELLA BROS. Pty. Ltd. Trentham, Vic.

**PATENTS
GEORGE A. UREN**

PATENT ATTORNEY
NENTY HOUSE, 499 LITTLE COLLINS ST.
MELBOURNE.

PRODUCTION OF NATURAL FRUIT JUICES

The Processes Involved :: By-Products from Apples

PART 1

IN A VALUABLE REPORT prepared by Dr. T. H. Harrison, Fruit Officer of the Commonwealth Department of Commerce in London, some facts concerning the tremendous development of the production of fruit juices and the steps necessary to develop this industry are given in detail.

In view of the importance of this phase of production to the fruit industry in Australia, we give the full report in the belief that our readers will appreciate the wisdom of developing other aspects and other markets in the near future.

Introduction.

Amazing advances have taken place during the last five years in the technique of production of natural fruit juices. Partly as a result of the drive towards the ideal of providing fresh fruit, either in a whole or liquid condition, throughout the whole year as an essential plank in campaigns for national fitness, and partly encouraged by economic factors, the natural fruit juice industry is now thoroughly established in several countries.

In North America, where the trend towards consumption of natural fruit juices has been in evidence for many years, consumption figures for Tomato, citrus and Grape unfermented juices have reached very high levels. On the continent of Europe, the development of the natural fruit juice industry has been nothing short of spectacular, mainly during the last five years. This development has been most marked in connection with Grape and Apple juices, largely because supplies of these fruits are most abundant.

In Germany, dietitians, health authorities, temperance societies, athletic associations and political organisations have all united under the benevolent influence of a Government which believes that national efficiency is largely dependent on providing its people with the vitamins, minerals and other nutritive properties contained in fruit juice. Experimental evidence is available to show that fermentation destroys 4/5 of the value of fruit juice and 9/10 of the value of Grape juice from the nutritional point of view. In 1937, 16,000,000 litres of unfermented Grape juice alone were consumed in Germany.

The following statement epitomises the German conception of unfermented fruit juice for human consumption:

"Fruit is an important food. Its high percentage of soluble sugar makes fruit especially well suited to sportsmen and 'wanderers.' This is the more so, as it contains but few indigestible constituents. Its water percentage imparts to it unsurpassed thirst-quenching and refreshing qualities. Of importance is, further, its percentage of salt, lime and phosphoric acid, other salts, and its surplus of bases. Palatable and refreshing substances are the fruit acids, and the aroma-

tic constituents, to which is due the wonderful aroma and fragrance of the fruit. Hence, fruit is no luxury, and is not merely palatable, but has good nutritive values. Unfermented fruit juice is rightly called 'liquid fruit,' and, apart from milk, is the natural beverage and foodstuff of the masses."

In fact, other authorities consider that fruit juice is a necessary complement to milk in a proper diet, particularly that of children.

In England, the unfermented fruit juice habit has been slow to develop, although large quantities of fruit juice have been used in syrups and in flavored aerated waters. Nevertheless, during 1936 and 1937, several plants for the production of unfermented Apple juice, and others for the manufacture of fruit syrups, have been established.

A consideration of the Australian Apple industry forces one to the conclusion that it is highly desirable, for two major reasons, that an efficient fruit juice industry be there established.

The first reason is the necessity of providing additional or alternative outlets within Australia for the fruit produced. This necessity is becoming increasingly urgent as the profitable export market shrinks. The second arises from the necessity of removing from the market the large quantities of relatively inferior fruit which normally tend to reduce the appeal of, and demand for, all fruit, and thus limit the market even for that of better quality.

Such a step is a prerequisite to the success of any extensive advertising campaign to increase fruit consumption in Australia.

Statistics reveal that in Australia each year there are consumed per head of total population an average of about 9½ gallons of ale and beer, 1½ gallons of aerated water, and 2 gallons of wine.

Details available indicate that a yield of about 150 gallons of juice per ton—or about 3 gallons per bushel—of Apples can reasonably be expected. On the basis of these figures, in order to relieve the market of approximately 1,000,000 cases of Apples, it would be necessary only to induce the Australian public each year to consume approximately 3,000,000 gallons of unfermented Apple juice, i.e., less than half a gallon per head. This would appear to be a very easy task, provided that the new beverage had real merit, and could be offered at a price competitive with beverages already available. In fact, it does not seem to be too optimistic to envisage a consumption of fruit juice soon reaching at least to the level of that of aerated waters, or to approximately half of the consumption of wine, or to approximately 1/10th of the consumption of beer, etc.

If this could be applied to Apple juice alone, it would not only relieve the market situation for Australian

Apples on present production figures, but probably stimulate the planting of new areas of fruit specially suitable for the purpose of juice production. The bearing which the suggested new industry would have on the present variety change over programmes can readily be appreciated by anyone conversant with the lack of decision and precision found amongst those who are called upon to advise the growers regarding varieties to maintain or extend.

The technique of juice production has received considerable attention by teams of trained investigators in various parts of the world, and, while uniformity in detailed procedure is unlikely to occur, the essentials are now fairly well established. In the following description of the processes involved, particular reference is made to Apples.

Raw Material.

An idea current amongst first operators was that fruit of lowest quality could be used, the main virtue of such material being its cheapness. This has been followed by a realisation that the quality of the product varies directly with the quality of the raw material. Because of varying sugar acid ratios in the fruit, the striking differences between the extracted juices from different varieties is something which can be modified, but not entirely masked by manufacturing processes.

Great attention is therefore now being given the varieties from which to obtain juices for specific tastes, and to blending of different varieties, either before or after extraction, to meet the requirements of consumers.

It is also essential that fruit entering the mill should be free from rots and various Apple-eating insects, and should be thoroughly clean. To ensure cleanliness, washing by an efficient plant may be essential. Adequate arrangements for weighing, sorting and washing will normally be found in a well-organised fruit juice factory.

A Mill.

The fruit must be macerated to allow of even spread of the "cake" or "cheese" on cloths, and to facilitate juice extraction. The fruit is normally passed through a hopper containing a revolving drum with projecting knife blades. Stainless metal is sometimes advised, but, while desirable, is not necessary. Experience in cider manufacture for at least half a century has led to the evolution of satisfactory equipment for the milling of Apples. A typical example is illustrated in the appendix to this report.

Frames and Cloths.

Before Pressing, the macerated fruit is fed from the mill, and spread out evenly on cloths, supported and separated by wooden frames, or trays, in such a way that a series of layers of macerated fruit, each from 2-3 in. thick, and enclosed by cloths, is available. The cloths may be of wool, of hemp, or of cotton. Each type has supporters, and it is clear from evidence available that the condition and variety of fruit must influence the closeness of the meshes of the cloth, but, apart from that, other economic considerations, such as first cost, length of life in use, determine the type.

The trays consist of criss-crossed slats, or laths, usually 2-3 in. wide

and 3/16th in. thick, arranged to give spaces of 1-2 in. square between slats. They may be made of ash or willow and probably of other woods not heavily charged with aromatic materials or with heavy tannin content. The size of the tray and the quantity used depend largely on the size and power of the press available.

Cleaning of both trays and cloths is secured by scrubbing with hot water, which, in some places, contains sulphurous acid.

Many devices are in use for transferring the stack of trays to position under the press, which is always quite close to the mill. There seems little need for any expensive equipment for this operation, but to facilitate loading one set of trays while another is under the press, a flat-topped trolley, which can be moved on light rails to position under the press, is cheap and efficient. Thought given to this part of the organisation will make for smooth and economic working of the factory, because normally the pressing of one lot of cakes should only occupy 20-30 minutes, in which time another set of cakes should be got ready.

The Press.

Many types have been seen, all hydraulic, and capable of exerting heavy pressures up to 500 lb. per sq. inch. The quantity of juice extracted depends partly on the efficiency of the press. At Long Ashton Cider Research Station, Bristol, two pressings are given, 130 gallons per ton being obtained by the first, and 20-25 gallons per ton by the second. At Kirdford Growers Ltd., Kirdford, Sussex, a single pressing yields about 150 gallons per ton. At Orchard Products Ltd., Wisbech, it was claimed that 165-180 gallons per ton were obtained by a single pressing, but this yield may have been affected by some free water adhering to the fruit, because a mechanical bucket elevator was used to convey washed fruit to hopper above the mill. Any type of efficient hydraulic press as normally used in Australia for wool bales, etc., would appear suitable. Some presses are hand-operated, and others driven by an electric motor, oil engine, or other source of power. All presses have a fairly deep trough at the bottom in which the juice accumulates, and from which it can be pumped or run off by gravity to a suitable container.

For details of suitable presses see appendix.

Settling and Enzyming.

The juice is accumulated in some container, the size of which usually conforms to requirements of a certain working period. Into this, enzyme, either filtragol or pectinol, at the rate of 1 lb. per 100 gal. is placed, and action permitted for 16-24 hours, with the object of breaking up and inducing sedimentation of pectins. At this stage, to improve the strength of the Apple flavor and hence the appeal of the juice, it is recommended by Mr. Vernon Charley, of Long Ashton Cider Research Station, that about 3½ lb. of pulp residue per 10 gal. of juice be added. Mr. Charley thinks that pectinol is superior to filtragol, but other operators in England show little or no preference for either enzyme, each of which costs about 8/- per lb.

(To be continued)

Gerrard Sales and Service

Good Australian packing supplies backed by dependable
GERRARD SERVICE

Wire Tying Machines — Wire-Seal Strapping — Flat Band Strapping
Corrugated Fasteners — Fountain Stencil Brushes — Fountain
Address Markers — Automatic Label Tackers — Tack Strip for Automatic
Label Tackers — Conveyors — Packing Equipment



GERRARD WIRE TYING MACHINES CO. PTY. LTD.

Melbourne Sydney Brisbane Townsville Perth Adelaide Hobart

DRIED FRUITS NEWS AND NOTES

Black Spot of Vines

Dormant Spraying Needed

Black Spot is well known to Grape growers for the damage it causes to shoots, canes, leaves and berries. The control treatment in Spring and Summer by spraying with Bordeaux mixture is employed by some growers, but the importance of the Winter treatment, involving swabbing or spraying when the vines are dormant is overlooked in many cases.

Sanitation Measures.

After pruning, all cuttings should be collected and burnt. If time and labor permit, the loose old bark may be removed and burnt, but under no circumstances should this material be left on the ground in the vineyard.

Swabbing or Spraying.

While dormant, the vines should be swabbed or sprayed once or twice with one of the following solutions.

Sulphate of iron—sulphuric acid solution (5 lb. sulphate of iron, ½ pint sulphuric acid, 1 gallon water); or Sulphuric acid (1 gallon to 10 gallons water).

To make the sulphate of iron-sulphuric acid solution, dissolve the sulphate of iron by suspending it overnight in a piece of bagging in the water. In the morning, add the acid

slowly to prevent any spurting. Use a wooden or earthenware vessel.

Another method is to pour the sulphuric acid over the sulphate of iron and stir well, then add boiling water, slowly stirring all the time. There is greater danger of spurting in this case.

The dilute sulphuric acid is recommended where spraying is carried out in preference to swabbing; it is also an effective swab. When using the solutions as a spray, specially-constructed lead-lined knapsack spray pumps may be used, while large pressure casks are also obtainable.

A Warning.

Sulphuric acid must be added carefully to the water, otherwise it may splash up and burn the hands and face of the operator. If it is added to the water, it should be poured in slowly in a thin stream, the water being stirred at the same time. Sulphuric acid has a very corrosive action on all metals except lead.

Swabbing is best carried out by means of a small tar brush or a brush made of binder twine on a long handle, or with a mop made of woollen rags tied to a stick. The brush or mop must contain no metal.

Two Swabbings May be Necessary.

If the disease has been rampant in the previous season, two applications are desirable. When only one swabbing is given, it should take place as near as possible to the bursting of the buds, but it is important not to leave the application so late that injury may be done to the bursting buds, as unexpected sprouting of the buds might then prevent the work being done at all. Where two applications are decided on, the first should be given a month to five weeks before the bursting of the buds, and should be followed by the second application just prior to the bursting of the buds.

Swabbing undoubtedly reduces the total amount of infective material upon the vines, and thus provides against an early attack of the disease. It delays the bursting of the buds a week or ten days, and on that account is advantageous in districts that are subject to late frosts.—“N.S.W. Agric. Gazette.”

AGRICULTURAL PIPES

ALL SIZES

Quality Unsurpassed

Railways allow 21% Freight reduction on Truck Lots.

Prices on Request to

LILYDALE TILE WORKS

Main Road Lilydale Vic.

Phone 99

ESTABLISHED 50 YEARS

“WONGA” HIGH PRESSURE KNAPSACK

The “Wonga” Knapsack Spray Pump is the only hand lined machine on the market, and is coated with a metal compound which possesses much greater acid-resisting qualities than lead. The valves — another special feature — are made from selected solid brass and are situated at the bottom of the pump. It is also unique in its three distinct sieves.

The pressure patented regulator assures even, efficient working. It is easy to handle and comfortable to carry.

Weight when empty — 15 lbs. Capacity — 3½ gals.

“WONGA” Knapsack Duster, 20 lb. capacity 80/-. Hand Dusters, 4/6, 7/6, 12/6.

Inspect at Agents: HUDSON'S STORES, 655 Bourke St., Melb.



PRICES:
Brass 90/-
Acid Resisting 105/-

N.S.W. DRIED FRUIT QUOTAS.

Recommendation Adopted.

THE Secretary of the Consultative Committee of the State Dried Fruits Boards (Mr. W. N. Twiss) states that the Boards of S. Aust., Victoria and N.S.W. had approved of a recommendation of the Committee to revise the quota for 1938 season's Prunes.

In making this recommendation to the Boards, the Committee surveyed the revised production figures for the season, as well as the Australian market requirements.

The Committee also took into account the carry-over of Prunes from the 1937 season.

The enquiry pointed to a steady increase in the Commonwealth consumption of Prunes, notwithstanding the relatively large proportion of small-sized fruit produced in South Australia.

The opening home consumption quota for the season was 50 per cent., and the Boards have now approved of the recommendation to increase this quota to 65 per cent. Under existing legislation in all producing States, the increased quota means that not more than 65 per cent. of the Prunes produced in any one State may be lawfully marketed in such State.

The quotas for the other varieties of dried fruit remain unaltered. These are—

	Per cent.
Currants	15
Sultanas	12½
Lexias	40
Peaches	55
Pears	25
Apricots	40
Nectarines	60

DRIED FRUITS FOR CANADA AND NEW ZEALAND.

In our July issue, on page 13, an error occurred in stating the quantity of dried fruits, normally shipped to Canada and New Zealand. Instead of 2,500 tons the figure should have read 20,500 in round figures. Actually, the shipments in 1936 were as follows:—

Canada	16,130
New Zealand	3,994
Other markets (including Australia)	845
Total	20,969

AUSTRALIAN DRIED FRUITS SALES IN GREAT BRITAIN.

The Commonwealth Dried Fruits Export Control Board reports sales recorded with the agency of the Board at London for the week ending July 14; 936 tons were sold, including 431 tons of new season's Sultanas at £39/7/- per ton, 399 tons of Currants at £27/4/10 per ton and 94 tons of Lexias at £50/6/2 per ton. The market is firm.

... FRUIT TREES ...

ALMONDS, APPLES, PEACHES, APRICOTS, PLUMS, QUINCES, etc., in best sorts.

Extra strong trees 1½ each, 15/- doz. Usual size 1/- each, 10/- doz., 75/- per 100.

CHEERRIES on Mazzard 1½ each, 15/- doz., £5 100.

APPLE TREES 6/- doz., 35/- 100.

GOOSEBERRIES. LOGANBERRIES.

CURRENTS 4/- doz., 25/- 100.

STRAWBERRIES 2/6 100, 14/- 1,000.

RASPBERRIES 1/- doz., 6/- 100.

ROSES

Choice: 1/- each, 10/- dozen.

Standard: 2/3 each, 25/- doz.

Maples, Genis'as, Cotoneasters, Ash, Oaks, Elms, Poplars and big variety of shrubs and trees, 1/- to 4/- each, according to size and kind.

A. G. NIGHTINGALE & CO., Nurserymen, Emerald, Victoria.

DRIED FRUITS ACT.

Yenda Grower Fined.

AT Barellan Police Court on Friday, July 1, Robert James Wood, horticulturist, of Yenda, N.S.W., was proceeded against by the New South Wales Dried Fruits Board and charged with selling approximately 19 lbs. of dried Apricots which were not packed and graded in accordance with the regulations under the Dried Fruits Act, 1933.

Inspector C. N. Hall appeared for the Board and stated that on March 19, 1938, he found at the shop of Messrs. Munro & Harris, trading as Barellan Cash Stores, Barellan, dried Apricots, which he considered had not been packed and graded in accordance with the regulations. The inspector stated that Wood is a fruit farmer at Yenda and has Apricot trees on his block. The inspector explained to the Court that the defendant lives on the irrigation areas and should be conversant with the regulations under the Dried Fruits Act; that there has been a large number of prosecutions during the last few years, to which due publicity has been given by the local press; that the returns from illegal sales are much more profitable than sales made in strict compliance with the provisions of the Act, and that growers who dispose of their fruit through legal channels at less remunerative prices expect the Dried Fruits Board to stamp out illegal sales.

The defendant informed the Court that his fruit crop was a failure this year and he was heavily in debt to the Rural Bank. In the circumstances he asked that a very light penalty be imposed, and assured the Bench that he would not again contravene the Act and Regulations. He was fined £5, and 8/- costs.

RATE OF CONTRIBUTION LOWERED.

N.S.W. Board Notifies 5/- Ton.

The N.S.W. Dried Fruits Board has decided that the contribution by growers in respect to the 1938 season's fruit will be at the rate of 5/- per ton in lieu of 5/6 per ton, as previously.

This contribution is applied towards the cost of defraying the expenditure involved in the administration of the Dried Fruits Act and of carrying out the duties and functions of the Dried Fruits Board thereunder.

The Board has also decided that the contribution will be collected from packing sheds on behalf of the growers.

LARGEST CROP ON RECORD.

California Dried Prunes.

If the present estimate is realised, California will this year have a record production of dried Prunes. It is anticipated at 271,000 tons, as against 249,000 tons in 1937, and an average of 197,000 tons for the ten years 1927 to 1936. Michigan reports prospect of a small crop owing to low temperatures in May. Idaho is above the average, whilst Washington has suffered from severe frosts.

Babs: "I've just seen Jane, and she's furious about her wedding announcement."

Doris: "Why? It didn't mention her age did it?"

Babs: "Well, not exactly, but it said, 'Miss Jane Oldum and Mr. Fred Brown were married, the latter being a collector of antiques.'"

Export & Commercial News

APPLES IN ENGLAND

Imported or Home Grown?

A Lesson for Australia

AN English newspaper recently printed the following study upon the Apple-growing industry in that country, and suggested that the consuming public does not bother much about what it eats so long as it is fruit of some kind. The article says:—

It appears that we have now reached the point when short crops at home and reduced imports of foreign and Dominions Apples no longer mean good prices for the home grower. So at the moment we have less Apples than we had in the country for years, yet our prices are down very considerably. Enthusiastic exponents of the "plant-more-Apples" slogan urge us to double our Apple acreage, but, since it appears that our prices automatically reduce themselves without further planting, it would be reasonable to suppose that addition could only accelerate the drop in price.

While the future is hidden, for the present it would be permissible to suppose that the shortage of Apples has been made good by the importation of foreign and overseas fruits, for fruit consumption continues to rise. Does the public bewail the fact that for every second Apple it ate last year it must now eat an Orange or a Banana, or that instead of Apple-pie, a pancake and half a Lemon must do? Not a bit of it! The public has been so wilfully deceived by alleged dietitians in the daily press, that it no longer credits any particular fruit with an particular vitamin content or deficiency; so long as it is fruit that is all that matters.

It is idle to retort, "Oh, unless something very unforeseen happens. 1938 will bring us another bumper Apple crop, and then all will be well again," for it is certain that a proportion of the Apple-eating public will have developed a craving for Oranges or Bananas, and will not willingly return to the Apple. I ask you to consider the drift to that way of thinking as indicated by the following figures:—

	1936 Ton	1937 Ton
While Apple imports decreased from	282,000	to 275,000
and		
Our home crop decreased from	383,000	to 100,000
Imports of—		
Pears increased from	54,000	to 56,159
Oranges increased from	477,000	to 624,634
Bananas increased from	413,000	to 452,651
Grapefruit increased from	57,000	to 65,929
Lemons increased from	50,000	to 58,000
Grapes increased from	35,387	to 37,572
Plums increased from	11,577	to 11,733
Peaches increased from	3,577	to 4,957

It will be noted that during the year every one of these imported fruits has shown an increase, and that increase on the year, which amounts in all to 210,000 tons, takes the place of our depleted Apple supplies which on an average of 550,000 tons are 175,000 tons below par.

With regard to the problem of declining Apple consumption, which so many of you will neither recognise nor admit, M. J. F. Cahan (Economics Research Institute, Oxford) published an article in January, 1936, in which he pointed out that during the period 1925-34, the increase in the average consumption of Apples had shown no rise at all as compared with other fruits. During that period the increase in the consumption of Oranges, Grapefruit, Lemons, Grapes and Bananas had gone up by some 25 per cent. He said a good many other things which are rapidly coming to pass. Mr. Cahan is a prophet who has no axe to grind, no Apples to sell, and bases his predictions on mathematics of perfect purity.

What we need now are rationed markets. It is, for example, useless for S. African growers to send over Dunn's Seedling cooking Apples if we have lashings of Bramley's in store when they are due to arrive. It is a pity for indifferent Plums to be on the market when the Jaffa Oranges begin to come along, and it is ridiculous to expect the public to eat mealy, overstored home Cox's when the New Zealand consignments of fresh juicy ones are on the market. There is a season for Argentine Pears and for Californian Comice, and with a little goodwill and arrangement it should be possible to ensure that the public always gets the best fruit at its best. There is, and must be, a tremendous bulk of rubbish to be got rid of, and unless the Government subsidises the rubbish and works it for its by-products the public will be offered it and it will spoil the sale of good produce.

Tasmanian Apple Exports

Reform Needed in Packing

A busy Apple season is reported from the Huon district where a satisfactory yield is recorded. The universal adoption of centralised packing houses is urged by Mr. T. T. McKinley, Tasmania's representative in London, who states that if Tasmania is to compete successfully with other Apple exporting countries, the State must re-form its present packing methods.

modified system of community packing, notably Mr. C. L. Ivey, and growers in the Port Cygnet area, who are increasing this method, following the success of earlier experimenting.

Another reform recommended is the standardisation of cases along the lines suggested by Mr. P. H. Thomas, Chief Horticulturist, upon his return from America last season. Growers in other districts are planning to follow Cygnets' lead.

Apples from North America

Exports Increase in 1937-38

COMBINING overseas shipments of Apples from Canada and U.S.A. it is seen that 1933-34 holds the record for all seasons. In that year 21,924,000 boxes were shipped abroad as against the next best year in 1931-32 with 21,562,000 boxes and comparing with 16,002 boxes in 1937-38.

Of these quantities a considerable market has been cultivated in Europe, and the following table shows the shipments to Europe in the past six years. Expressed in 1,000 boxes:—

1932/33: Canada 5,230, U.S.A. 12,552, total 17,782.
1933/34: Canada 10,111, U.S.A. 11,019, total 21,130.
1934/35: Canada 5,667, U.S.A. 7,125, total 12,792.
1935/36: Canada 6,473, U.S.A. 10,396, total 16,874.
1936/37: Canada 4,303, U.S.A. 5,279, total 9,582.

1937/38: Canada 6,459, U.S.A. 8,470, total 14,935.

It is interesting to note, however, that U.S.A. is consuming a greater proportion of its production of Apples than is Canada, and this is partly due to

Educational Publicity Campaigns that the former country organises each year. For instance, the proportion of Apple production exported by U.S.A. is dropping, whilst that of Canada is increasing. The proportion of the total production exported from Canada in 1935-36 was 48 per cent., whilst in 1936-37 it had decreased to 34.8 per cent., and in 1937/38 to 43.4 per cent. U.S.A., on the other hand exported 11.1 per cent. of its total production in 1935/36, 7.8 per cent. in 1936/37, and 7.3 per cent. in 1937/38.

Make Your Export Produce a Safe Investment by Shipping to and through SOUTHAMPTON

PEARS and APPLES

A few days saved mean the difference between profit and loss

There are many reasons why you should ship your perishable produce—particularly PEARS—through Southampton, England's most modern port. Here are some of them:—

Substantial local markets with a fruit sales room actually on Southampton Docks Estate. Quicker and frequently cheaper transit to Southern and Midland Towns. The Southern Railway of England runs express freights from Southampton to all these centres, saving days and money.

London is reached by express freight trains in three hours from Southampton—All fruit unloaded in Southampton to-day will be at Covent Garden, Spitalfields, or Borough Market for early morning market to-morrow, with days saved as against fruit discharged by ships calling at Continental and other outports first. The slight additional cost is altogether outweighed by the tremendous advantages of days saved.

Deterioration is avoided by special arrangements for sorting to mark, and quick insulated trains direct to London.

Southampton cold stores available for storage of produce for local consumption or Midland deliveries. Pears can be discharged from ship to cold store in less than 5 minutes.

Before the next exporting season, consider these advantages, and ask for Southampton Discharge for London Markets.

THE QUICKEST WAY TO BRITAIN'S MARKETS

For rates and all general information, write to the Australasian Agents:

SOUTHAMPTON DOCKS

Owned and Managed by

SOUTHERN RAILWAY OF ENGLAND

Australasian Agents:

H. W. BEVAN & CO. PTY. LTD.
55 YORK STREET, SYDNEY

"DUERDIN" HOUSE, 14-16 BOND STREET, MELBOURNE

LONDON REPORT.

Out-turn of Recent Shipments.

In reporting upon the out-turn of Australian fruit in London, the Commercial Officer (Mr. S. R. McColl) gives the following comparisons.

The "Ceramic" shipment consisted of 9,169 bushel cases of Apples and 9,171 cases Pears. The Pears arrived

in good condition and realised: Pack-hams 13/6 to 14/-. Bosc 13/- to 13/6, Jos. 12/6 to 13/6. Glou Morceau 12/9 to 13/-. Keiffers 11/6 to 12/6, Winter Cole 12/- to 13/6, and Vicars 10/- to 11/3.

The Apples consisted of the following varieties: Jonathans mostly in good condition and quality; Dunns, a particularly attractive pack of high quality; Romes; all in good condition

but color in most lines just above minimum; London Pippins showed a forward tendency but otherwise in good condition; Granny Smith sound, clean and of good quality; Statesman, all but one line in fine condition. Prices were quoted as Cleo. 10/-, Jon. 9/- to 9/6, Statesman 8/6, Dunns 10/-, Grannies 13/-, Romes 9/-.

The report upon a consignment of Apples to Glasgow, landed on May

12, stated that they met a good demand, but owing to heavier quantities values were generally 6d. to 1/- low. Victorian Jonathans were generally superior to those from Tasmania. Dunns and Cleos. were a little over-matured in some of the large sizes.

SALE OF FRUIT BY COUNT.

A Suggestion from England.

A Geelong reader sends in the following with the hope that it will be of interest to and be seriously considered by the Apple industry in Australia.

While the discussion about selling Apples by weight or count is in full swing in Australia, the following letter from Mr. E. Everitt, retail fruit merchant of Accrington, Lancashire, England, to Kiewa Valley Orchards Pty. Ltd., is interesting. The Kiewa Valley Orchards Co., in exporting Granny Smith Apples, always put a card in the packed box asking for criticism or suggestions.

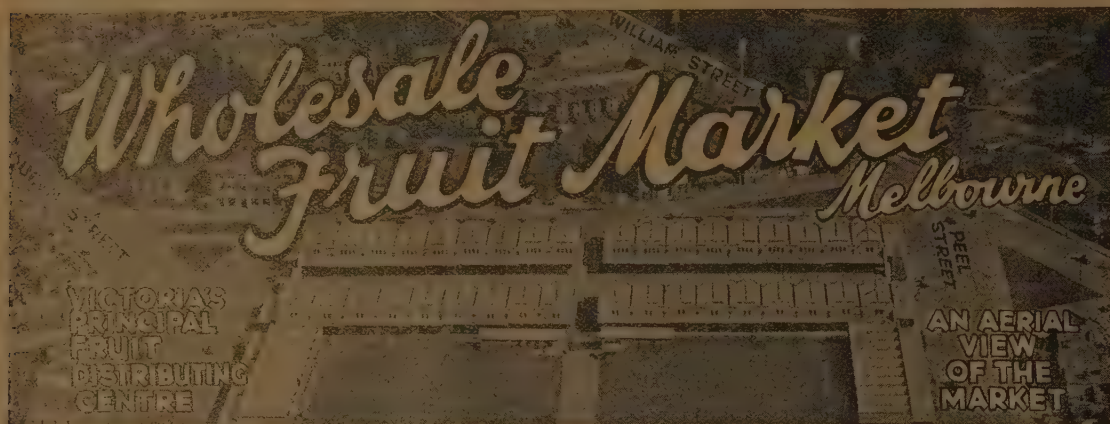
Mr. Everitt has been purchasing Kiewa Valley Orchard Granny Smiths in England this season, and asks that Apple cases be not merely marked with kind and size of fruit. The most valuable thing to the retailer is the number of Apples in the box and the weight of the contents, as then it is quite easy to reckon the selling price either in pounds or numbers.

"Both the Canadian pack and the American pack, quote the number of Apples, and the net weight on the side of the box. So this is the suggestion I am sending you, a small thing, but rather an important thing and I can assure you that the majority of retailers would appreciate it."

FRUIT INTO SOUTH AUSTRALIA.

As indicating the seasonal fluctuations that normally occur, the Chief Inspector of Fruit in S.A., Mr. A. G. Strickland, reports the following importations of packages of fruit and vegetables into that State during February and March, 1938.

	Feb.	Mar
Apples (bushels)	70	735
Bananas	16,168	16,037
Grapefruit	191	108
Oranges	283	98
Peaches	57	20
Pears	37	23
Pineapples	1,557	1,313
Tomatoes	100	38
Peanuts (bags)	364	692
Onions	1,350	941



Cable Address: DAVIS, MELBOURNE.

Code: "ABC," 4th and 5th Editions.

Box, G.P.O. 148B.

J. DAVIS PTY. LTD., Fruit Merchants

8 WHOLESALE FRUIT MARKET

Consignments solicited.
Telephone, F 2322.

One Trial Invited.

Best Prices obtained.

Prompt Advice and Payment.

Bankers: The National Bank of Australasia, 271 Collins Street, Melbourne.

Telegraphic Address: "Listeria," Melbourne.
Codes: Bentley's A.B.C., 5th Edition.Postal Address: G.P.O. Box 555D. Telephone: F 6341.
Private: Windsor 4535.**GEORGE LISTER PTY. LTD. (Managing Director: J. R. VAIL)**Selected Agents for all Growers' Organisations Throughout the Commonwealth.
Wholesale Fruit Merchants — Licensed Commission Agents — Importers and Exporters.

No. 12 WHOLESALE FRUIT MARKET, MELBOURNE.

Having carried on a successful business for over half a century, our name stands high in the Wholesale Fruit Trade of Australia. Our spacious premises at Melbourne Wholesale Fruit Market are admirably adapted for the conduct of our large business, and growers are assured that our best efforts are always at their disposal.

Bankers: Commercial Banking Co. of Sydney, Melbourne Branch. Fidelity Bond Guaranteed by I.O.A. Insurance Co.

Silbert, Sharp & Davies
Pty. Ltd.
FRUIT MERCHANTS
17 Wholesale Fruit Market
Phone: F 2287.

REGULAR SUPPLIES OF
GOOD FRUIT, WELL PACKED
AND GRADED,
BRING THE BEST RESULTS.

A. MILLIS & SONS

34 Wholesale Fruit Market

EXPORTERS AND IMPORTERS

Specialty—Prompt Returns. Cheques
every Wednesday. Phone: F 1862

J. W. ROSS
13 Wholesale Fruit Market
WHOLESALE FRUIT MERCHANT
Prompt Returns and Sales Notes Daily.
Tel., F 2426.

G. WOOLF
29-30 Wholesale Fruit Market.
WHOLESALE FRUIT MERCHANT
& COMMISSION AGENT
Telephone: F 5550.

BELL, BANSON Pty. Ltd.

Wholesale Fruit Merchants,
20 Wholesale Fruit Market, Melb.
CONSIGNMENTS OF FRUIT AND
VEGETABLES SOLICITED.
Tel: F1023; Private: JW5528.
Bankers: E.S. & A. Bank,
Market Branch.

T. Stott & Sons

FRUIT MERCHANTS

ESTABLISHED 1882.

26 Wholesale Fruit Market, Melbourne, And at VICTORIA MARKETS.

SHIPPING No. 41.

PHONE: F 4370.

COUNTRY AND INTERSTATE ORDER TRADE SUPPLIED.
PROMPT SETTLEMENTS. CONSIGNMENTS SOLICITED.

Bankers: Bank of Australasia, Melbourne.

Regular Supplies of
Quality Fruit well Packed
and Graded will realize
the Best Prices.

**Tim Young & Co.
Pty. Ltd.**

WHOLESALE FRUIT MERCHANTS

18 Wholesale Fruit Market

Growers can be assured of receiving
the very best service and prompt
returns.

Cable Address "TIYOUNG"

A.B.C. Code, 5th Edition.

Box 38a, G.P.O., Melbourne.

TELEPHONE, F 4321

Bankers:

E.S. & A. Bank Ltd.
Melbourne—115 Swanston Street.

Stencil or Labels on application.

H. LOUEY PANG & CO. PTY. LTD.

FRUIT AND PRODUCE MERCHANTS

No. 4 WHOLESALE FRUIT MARKET, MELBOURNE

G.P.O. Box No. 795F, Melbourne.

References—E. S. & A. Bank, 225 Swanston St., Melbourne.

Telegraphic Address: GOOD PRICES ASSURED

"PANGANCO."

Cheques Sent Promptly.

F 6332.

CONSIGN YOUR FRUIT TO

R. A. WING & CO.

Wholesale Fruit and Produce

Commission Agents.

No. 37 Wholesale Fruit Market,

Melbourne.

Branches 141 Little Bourke Street

and Victoria Market.

TELEPHONE: F1744.

CONSIGNMENTS OF FRUIT

AND VEGETABLES

Assured Highest Market Rates.

P. A. PATRIKEOS

36 Wholesale Fruit Market

Melbourne

Telephone: F2227.

H. & S. FRANKEL

(Established 35 Years)

No. 44 WHOLESALE FRUIT
MARKET, MELBOURNE.Growers in all States are invited to
send consignments. Highest market
rates and prompt settlements.

Telephone: Store F4874;

Bankers: Private F1555 & F5711.

Commonwealth Bank of Australia.

2500 Fidelity Bond Guarantee.

A. E. PITT

Established 1891.

Member of Wholesale Fruit

Merchants' Association of Vic.

14 WHOLESALE FRUIT

MARKET, MELBOURNE.

Consignments Solicited from all

States. Growers Will Receive Top Market

Value and Prompt Returns.

Fidelity Bond Guarantee for £1,000

Pea and Bean Stands,

11 and 12 Victoria Market.

Reference—E.S. & A. Bank,

Elizabeth St. Branch, Melbourne.

Phone: F 5824.

**Producers'
Co-operative
Distributing
Society Ltd.**

Are now paying a Bonus
of 10% on all Commis-
sions charged to regular
clients of the Fruit &
Vegetable Section for
year ending Sept., 1935

Send Your Consignments

TO US

MELBOURNE & SYDNEY.

Overseas Fruit Crops

Canada: The latest report, dated June 10, states that in Nova Scotia, Apples were progressing favorably, prospects for a good set. Disease and pests were under control. Indications of slightly above average crop. Pears heavy. **New Brunswick:** Total bloom Apples probably average 70 per cent. of 1937 crop. Indications suggest larger crop than last year. Planting maintained and acreage assured. **Quebec:** Apples set good and fruit sizing well. Orchard's sprayed are free of scab. **Ontario:** Autumn and Winter varieties Apples promise well. Delicious shows only moderate set. **British Columbia:** Apples show 90 per cent. crop can be expected, a few 100 per cent. Pears set is not as heavy as first expected, but crop should exceed last year's. Peaches setting well. Indications show heavier crop than last year. Apricots sizing well, should crop 10 per cent. over last year. Plums and Prunes both should equal last year's crop. **Okanagan reports** Apples 80 per cent. prospect with 100 per cent. in some districts or an average of 90 per cent. overall. McIntosh Apples will be light. Pears set is not as heavy as was expected, but should equal last year's crop. Peaches suggest a heavy crop and Apricots are expected to be 10 per cent. above last year.

Germany: In North and West conditions favorable, but South suffered damage from frosts. Apricots and Peaches suffered most. Pears and Apples will be slightly down.

California: The Californian Co-op. crop reporting service for June states that the total production of fruit harvested in 1937 was 311,000 tons of Apricots (as against 248,000 tons in 1936). Peaches 558,000 tons (516,000), Pears 290,000 tons (299,000), and Plums 66,000 tons (64,000).

In commenting on Apples, there was a slightly increased estimate over May, being a prediction of 58 per cent. as against 74 per cent. a year earlier. Grapefruit was estimated at 81 per cent. as against 70 per cent. in 1937 at that date. Oranges were 81 per cent. as against 82 in 1937. Lemons 80 against 61, and Limes 66 as against 81.

Peaches were forecast for all States at 50,920,000 bushels, with California expecting 19,497,000 bushels followed next by Georgia at 5,548,000 bushels as compared with 23,252,000 and 2,730,000 bushels respectively in 1937.

Pears promised in 1938 in all States would reach 29,876,000 bushels as against 29,548,000 bushels in 1937.

United States of America: Freezing weather in April caused considerable damage, but May prospects reported improvement. Some damage to Apples and Pears in Virginia. Peaches suffered from frost in Texas and Oklahoma. Citrus in Florida lacked rain and caused heavy dropping of young fruit. General conditions good in New England. Insect infestation bad in New York State. Illinois suffered from spotted Apples, reducing crops. Michigan reports good crop expected. Missouri suffered freeze losses. Indications good in most Southern States. In California Peaches prospects were down on May 1, suggesting smaller crops than in 1937 for Peaches. Colorado and Utah report good indications. Good Pear crops promised in South Atlantic States except Virginia. Pacific Northwest generally favorable for Pears. Oregon reports brown rot in evidence and some aphid damage.

Young Husband: "I got your telephone message and came immediately. What has happened?"

Young Wife: "You are just too late I am afraid. Baby had his toe in his mouth and he did look so sweet!"

1938 Apple and Pear Exports

Details of the exports of Australian Apples and Pears for the 1938 season (together with comparisons for the 1937 season) are supplied by the Commonwealth Department of Commerce as follows:—

Exporting State.	Apple Exports—January to June.				
	United Kingdom.	Continent.	Other Destinations.	Total, 1938.	Total, 1937.
	Cases.	Cases.	Cases.	Cases.	Cases.
N.S.W.	64,020	1,544	16,319	81,883	100,818
Vic.	502,141	32,581	11,848	546,570	717,837
Q'land.	20,509	—	14,489	34,998	24,950
S. Aust.	432,817	169,318	18,583	620,718	266,247
W. Aust.	337,779	147,832	50,065	535,676	679,310
Tas.	2,541,348	256,332	56,063	2,853,743	2,741,016
Total (1938)	3,898,614	607,607	167,367	4,673,588	—
Total (1937)	3,881,678	495,693	202,807	—	4,580,178

Exporting State.	Pear Exports—January to June.				
	United Kingdom.	Continent.	Other Destinations.	Total, 1938.	Total, 1937.
	Cases.	Cases.	Cases.	Cases.	Cases.
N.S.W.	16,802	—	10,631	27,433	28,385
Vic.	324,428	9,040	6,319	339,787	486,578
Q'land.	—	—	144	144	—
S. Aust.	44,211	—	1,853	46,064	51,432
W. Aust.	18,001	8,122	1,294	27,417	31,111
Tas.	127,750	—	253	128,003	205,891
Total (1938)	531,192	17,162	20,494	568,848	—
Total (1937)	766,084	9,591	27,722	—	803,397

NEW REGISTRATION.

Cooper, A. J., Pty. Ltd. Reg. 23/6/38. Capital: £2,000 in £1 shares. Objects: To acquire the business of fruit merchant, etc., now carried on under the style of "A. J. Cooper," and to enter into a certain agreement. Subscribers: Alfred E. C. Cooper and Eric W. Cooper (1 share each). First directors: Alfred J. Cooper (governing), Alfred E. C. Cooper, and Eric W. Cooper. Reg. office: Sydney, N.S.W.

1938 APPLE AND PEAR SEASON OPENED IN LONDON.

THE OPENING of the 1938 Apple and Pear season was celebrated in the cinema hall at Australia House, on Friday, April 29, and opened by the Right Hon. Sir Earle Page, Minister of Commerce, who was introduced by the Right Hon. S. M. Bruce, High Commissioner. Mr. G. T. Clark, Acting President of the National Federation of Fruit and Potato Trades' Associations Ltd., also spoke.

A large number of people attended, including importers, brokers and wholesalers in the fresh fruit trade, and quite a number of buyers from the big retail houses of London. There was also a good representation of press journalists present.

The fruit which was selected by Dr. Harrison, Fruit Officer, represented all the notable varieties of Apples and Pears. The condition of the fruit was good and its presentation most attractive.

UNDER NEW MANAGEMENT.

The store had been in the Jones family for generations, so when a notice, "Under New Management," appeared in the window the villagers awaited curiously the coming of the new proprietor. Days passed, and Jones still was behind the counter and the notice still prominently displayed. Then one bolder spirit asked him when the new people were coming in. "What new people?" asked Jones. "You've got 'Under New Management' in that window." "Oh, that? Didn't you know I got married?"



Licensed under Farm Produce Agents Act. **F. CHILTON** ESTABLISHED 1894
Fruit Commission Agent SHIPPING NO. 56.
HIGHEST MARKET PRICES — PROMPT RETURNS — RELIABLE ADVICE.
Registered Address for Telegrams and Cables: "CHILTONS." References:—Bank of N.S.W., Haymarket, Sydney and Growers throughout Australia.

CITY FRUIT MARKETS, SYDNEY.

N. & A. Fruit and Produce Company
Licensed Farm Produce Agents. (No. 2253)
HEAD OFFICE: 2 STEEL STREET, NEWCASTLE. 
References: Bank of New South Wales. Shipping Numbers on Application.
WE WANT YOUR BUSINESS — IN RETURN, WE OFFER GOOD AND PROMPT SERVICE.
BRANCH: 6 CITY MARKETS, SYDNEY. Telegraphic Address: "NANDA."
PHONES: Newcastle, 1365. Sydney, MA 8428.

<p>GROWERS!—Consign your Fruit to— JAMES SLATER PTY. LTD. 21 CITY MARKETS, SYDNEY. Postal Address: Box 36, Haymarket P.O., Sydney. Established 1882. SHIPPING NO. 19. 55 VIC. & TAS. Stanislas. Advice Notes, etc., on Application.</p>	<p>SERVICE WITH SECURITY. HOPKINS & LIPSCOMBE Proprietor: STANLEY H. FOSGON. LICENSED FARM PRODUCE AGENT MUNICIPAL MARKETS, SYDNEY. SHIPPING NOS.— 58 Vic. and Tas., 68 Q'land. Bankers: Bank of N.S.W., Haymarket, SYDNEY. Telephone MA 3946. Established 1900.</p>
<p>FRUITGROWERS! For Satisfactory Results, Send Your Fruit to F. H. G. ROGERS Fruit Selling Expert, MUNICIPAL MARKETS, SYDNEY. Shipping No. 83. Established 1900.</p>	<p>W. MUSGROVE & SON Licensed Farm Produce Agents. 6 City Fruit Markets, Sydney. Our Motto—Quick Sales and Prompt Settlements. Forwarding Numbers: Tasmania, Victoria, S. Australia, No. 58. Queensland, Northern Rivers, No. 18.</p>

Cold Storage in New Zealand

Gas Being Tried

Earlier difficulties in obtaining uniform temperatures and in coping with drip from overhead have been overcome in New Zealand, and coils are now being suspended from the ceiling instead of along the walls, says Mr. A. Powell, Cool Storage Office at Wellington in the "N.Z. Journal of Agriculture."

Some are delving into the principles of gas storage with a belief that the future of successful commercial fruit cool storage will be affected beneficially by the use of carbon dioxide, and a good deal has been done in this field of research that is encouraging. Again, the refrigeration methods used in many of our stores may be improved upon.

In late years direct expansion cooling has become increasingly popular because of the detrimental effect of absorbents such as calcium chloride and forced circulation on long-storage fruit. The wall coil, which also proved unsatisfactory because of the drip, accumulated frost and caused loss of cool-storage space. Moreover, the cooling effect of this coil is not everything to be desired. The placing of the coils on the ceiling gives perfect cooling, but the drip and the problem of obtaining uniform cooling if large sections are trayed were difficulties.

Full-length Coil Circuits.

These difficulties are overcome if the coil circuits are taken to the full

length of the chamber and the bends constructed in such a way as to bring two pipes with 6 in. centres together in one tray. The trays should be not less than 9 in. apart. Three trays can be constructed from a 3 ft. sheet of 24 gauge galvanized iron. They are of shallow V type construction, turned on the edges for added strength.

The circuit may be defrosted in the usual way. Preference is generally given to putting the hot gas into the coil by closing the expansion valve and opening a valve to admit hot gas into the coil at this end, which bears the heaviest frost. The return valve, being almost closed, allows the accumulated liquor to expand slowly into the return line.

The frost in the tray is then removed by hot water delivered into the cooling-chamber by an arrangement of pipes coming through the ceiling vertically where the trays meet in the centre of the chamber and slope to each end. On a two-storey building this hot water would be brought in from each end and drained to the centre of the room, and then carried off by trays arranged suitably for this purpose. The hot water is required to be 95 deg. or more to defrost quickly and effectively. The cooling water may be obtained from the jacket of an internal-combustion engine. For cooling temperatures more than 34 degrees hot water is not necessary, as the system will not frost up enough to interfere with its efficiency.

Hot Water for Defrosting.

The effectiveness of the system is increased when using lower temperatures if hot water is applied to the trays, as the defrosting may be done when the chamber is full without fear of damage to stored produce, adding to this benefit the increased gain in efficiency when using a clean coil.

When installing a system such as has been explained the following notes are helpful:—

1. Coils to be at least 5 in. from the ceiling, hung below supporting piping by specially constructed brackets.
2. Keep the trays 3 in. to 4 in. from the coils; this will check condensation and aid circulation.
3. Produce stored must be at least 8 in. below the bottom of the tray. This allows for more air space for the coil to work on and also effectively minimizes the danger of freezing on the top of the stack.

The system has proved its efficiency when cooling the heavy loads placed on a modern cool-storage plant by receiving large consignments of fruit for pre-cooling. In this case an increase of refrigeration may be effectively used in quickly reducing a cool-chamber in temperature if the cooling-coils and trays are free from frost accumulation.

The ideal height of the chamber for this system is about 10 ft. 6 in. The ventilation is vertical, and is provided for by marking the floors out and painting lines to represent the required amount. This method facilitates stacking, prevents mistakes, and provides a uniform amount of spacing throughout the cooling-chamber.

Automatic control, where possible, is ideal in using this system of coiling, as fluctuations are avoided. Brine circulation is most effective, and may be used with automatic control to cheapen running-cost.

The South Australian Fruit Marketing Association, Inc.

Executive Committee

MINUTES of monthly meeting of members held at Adelaide on July 29, 1938. Present: Messrs. J. S. Hammat, M. G. Basey, A. G. Strickland, S. M. James, R. Hannaford, J. H. Dunning, P. R. B. Searcy, R. O. Knappstein, H. N. Wicks, R. G. Hannaford, A. O. Petersen, A. R. Willsmore, W. F. E. Smith, G. Quinn, F. F. Redden, M. Vickers, J. B. Randell, J. Clifford, H. M. Charllick, R. H. A. Lewis, and the Secretary.

Chairman: Mr. J. B. Randell occupied the chair.

The minutes of monthly meeting held July 1, 1938, were taken as read and confirmed.

Publicity Campaign: The Secretary reported what had been done up to date in connection with the Apple and Pear Publicity Campaign.

Apple and Pear Council Conference: Letter from Australian Apple and Pear Council dated July 7, advising that the Annual Conference would be held in the second half of September, either in Melbourne or Sydney, and asking for the opinion of this Association as to the most desirable place.

The Secretary advised that a reply had been sent that South Australia was agreeable to the Conference being held either in Melbourne or Sydney, in accordance with the wishes of the majority.

Apple Control Bill: Mr. P. R. B. Searcy submitted a draft of letter to the Secretary, Department of Commerce, embodying suggested alterations to Clause 6, re appointment of exporters' representatives. It was agreed that the letter be forwarded.

Resignation of President: Letter dated July 20, from Mr. H. J. Bishop, advising that owing to ill-health he was compelled to resign as President.

Mr. J. B. Randell and Mr. J. S. Hammat made eulogistic references to Mr. Bishop's valuable services to the Association from its inception, and it was considered that it was a very serious matter to lose his services at the present time.

The following resolution was unanimously carried:—

"That the President's resignation be accepted with the very greatest regret, as it is realised that under the circumstances it would be unfair to ask for the decision to be reconsidered, and it was also agreed to record the very real esteem and appreciation of the Executive Committee for the excellent work done for the Association since its inception and a sincere hope that Mr. Bishop will have a speedy recovery from his indisposition."

A draft of a letter conveying the above resolution to Mr. Bishop was submitted to the meeting and approved.

Messrs. J. B. Randell and H. N. Wicks were appointed as a sub-committee to consider the question of giving some token of appreciation to the President as a memento of his valuable work. The sub-committee to report to the next meeting.

Apple and Pear Council Conference: Mr. Randell was unanimously appointed as the Growers' representative and Mr. Searcy was unanimously appointed as the exporters' representative to attend the Annual Conference of the Australian Apple and Pear Council in September next.

Chairman: Mr. J. B. Randell was unanimously appointed as Acting Chairman until the next Annual General Meeting of Members.

Research Sub-Committee Report: Mr. H. N. Wicks reported that at the Research Sub-committee meeting there had been a discussion in regard to the functions of this Association, and the S.A. Fruitgrowers' and Market Gardeners' Association, and the Research Sub-committee recommended that a meeting be arranged between the Executive Committees of the two Associations to discuss the problems of export and local marketing.

It was agreed that the meeting be arranged, and it was suggested that it should be held on Friday, August 19.

Leading Agents in the BRISBANE FRUIT MARKETS

Highest Prices. **A. S. BARR** Prompt Returns.
FRUIT EXCHANGE, BRISBANE, QUEENSLAND.
Wholesale Fruit Merchant and Growers' Agent.
A Trial Solicited. Returns Speak for Themselves. Shipping No. 19.
Established 1882. Registered Telegraphic Address: "Barr, Brisbane."

ESTABLISHED 1892.
W. ARKELL & SONS
SHIPPING NO. 12. GROWERS' AGENTS.
Brisbane, B.12
BEST PRICES, PROMPT ADVICE AND REGULAR SETTLEMENT.
Bankers: National Bank of Australasia, George St., Brisbane.




MURRAY IBROS

SECTIONS 5, 41, 42
ROMA ST MARKETS
BRISBANE

CONSIGNING N.O.S.
INTERSTATE 22 QLD 82

Do not run any Financial Risk with your Fruit
but Consign it to

HEDLEY GEEVES PTY. LIMITED

Telegraphic Address:
"Apples, Brisbane."

(Hedley Geaves, Managing Director)

Registered Shipping No. 6.

FRUIT EXCHANGE

BRISBANE

SELECTED AGENTS FOR:

Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.

Tasmania: State Fruit Advisory Board.
New South Wales: Griffith Producers' Co-op. Co. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

Established 1911.

Market Notes & Prices

SYDNEY FRUIT PRICES

Survey of Operations for the Period
June 25 to July 25, 1938.

By L. T. Pearce, Market Representative,
Fruitgrowers' Federation of
N.S.W.

THE persistently cold weather that has continued right up to the present has resulted in the fruit trade being very slow.

The d.y weather experienced early in the year has had the effect of reducing the quantity of vegetables available, so that for two years in succession the Winter in Sydney has witnessed high prices for vegetables and a monopolising of the retailers' money in that manner.

Throughout the past four weeks the value of Apples has steadily improved, the improvement, of course, applying to sound quality fruit. N.S.W. Granny Smith have grown in request and Cleo. from all sources have also been wanted. Supplies from Tasmania have been in the vicinity of 30,000 bushels each week, Scarlets appearing in reducing quantities latterly. Democrat are now more plentiful and the last of the Jonathan are appearing. French Crab have mostly been consignments of partly colored and green fruit and buyers have purchased them at the lower price ruling for colored French Crab. Crofton have not been very plentiful, and Sturmers have failed to excite any interest owing to their being frequently bruised. An impression has been steadily gaining favor that values of Apples in the near future are likely to improve. Pears have at all times been in steady request, the Packham's Triumph being the most popular, with the gradually disappearing Winter Cole selling well, if of medium size. Winter Cole, however, have mostly been very small and latterly some supplies have been released from the cooler in an over-ripe state. Victoria is now forwarding Beurre Bosc and other types in small quantities, while Tasmanian supplies have considerably reduced.

Tropical fruits have regularly appeared from Queensland and clearances have usually been affected fairly promptly. Prices of Pineapples have not been high, and Papaws have mostly been too green to suit the requirements of buyers. The Strawberry season from Queensland is now at its height, close upon 1,000 trays arriving last week, and just under 200 crates of boxes. Values of this product throughout the week are not usually very attractive, but on Thursday and Friday the week-end demand usually results in higher prices. Bananas have come forward at the rate of 7,000 to 8,000 tropical cases each week, demand being rather quiet. The Custard Apple season is nearly finished, and Passion Fruit of choice quality only have received very much attention from buyers. Surplus supplies of Passion Fruit of medium quality have frequently been purchased for the Melbourne market. Values of Oranges have been disappointing and available supplies gave every evidence of a heavy crop in the Hawkesbury-Windsor district and on the Murrumbidgee Irrigation Area. Seldom have prices been above the 4/- to 7/- range, and crates have mostly been around 10/- to 12/- (two bushels). Export of Navel Oranges to New Zealand has taken place each week, this fruit being supplied by the Irrigation Area. Lemons have shown no inclination to improve in value, and Grape Fruit has latterly accumulated. A heavy crop of Mandarins

of beautiful size and quality has been marketed, but although supplies are less than those of some years ago, they still seem excessive.

Prices.

Apples (Fancy and Good): Crofton (Tas.), 5/6 to 9/- per bushel; Cleopatra (Tas.), 5/6 to 8/- per bushel; Buncombe (N.S.W.), 6/- to 9/- per bushel; Delicious (N.S.W.), 7/- to 14/- per bushel, extra fancy to 15/-; Delicious (Tas.), 5/6 to 11/- per bushel; French Crab (Tas.), 3/6 to 5/6, few green to 7/-; Geeveston Fanny (Tas.), 5/- to 7/6 per bushel; Granny Smith (Tas. to 10/6), N.S.W., 7/- to 11/-, shipping higher; good grade 4/6 to 9/-, extra fancy to 12/-; Jonathan (Tas.), 5/- to 8/- per bushel, extra fancy to 9/-; Rome Beauty, N.S.W. (Tas. to 8/-), 5/- to 9/- per bushel, extra fancy to 10/-; Scarlet Permain (Tas.), 4/- to 7/6 per bushel; Stayman Winesap (N.S.W.), 6/- to 10/- per bushel, extra fancy to 12/-; Sturmer Pippin (Tas.), 3/- to 5/6 per bushel; Democrat (Tas.), 4/6 to 7/- per bushel. Extra Fancy and shipping higher. "D" grade lower.

Pears: Beurre Bosc (Vic.), 6/- to 8/6 per bushel; Glou Morceau (Tas.), 6/- to 8/- per bushel; Josephine (N.S.W., Tas. and Vic.), 6/- to 11/- per bushel; Packham's Triumph (N.S.W., Vic.), (Tas. to 10/-), 7/- to 12/- per bushel; Winter Cole (N.S.W. and Tas.), 6/- to 12/- per bushel; Winter Nelis (N.S.W., Tas. and Vic.), 6/- to 11/- per bushel. Extra fancy and shipping higher. "D" grade lower.

Bananas (N.S.W. and Q'land.): Prices according to the Banana Marketing Board of N.S.W. Regulation graded, first quality fruit. Six inch, seven inch, eight and nine inch, 12/- to 20/- per tropical case.

Custard Apples (Q'land.): 5/- to 7/- per half bushel.

Citrus Fruits.

Grape Fruit (N.S.W.): Local 3/- to 5/-, few 8/- to 10/- per bushel. Inland 4/- to 6/-, few 7/- to 12/- per bushel, 7/- to 10/- per two bushel crates.

Lemons, N.S.W. (Special and Standard): Local counts 125 to 216, 3/- to 5/-, few 6/- per bushel; smaller, 2/- to 4/- per bushel; plain grade, 1/- to 2/6 per bushel; inland, 5/- to 6/-, few 7/- per bushel.

Oranges. (Standard Grade per Bushel): Navels (N.S.W.), Counts 72 to 88, local 4/- to 5/6, special 6/-, inland 5/- to 6/-; Counts 96 to 113, local 4/6 to 5/6, special 6/-, inland 5/6 to 6/-; Counts 125 to 138, local 4/- to 5/-, special 6/7, inland 5/6 to 6/-; Counts 150 to 175, local 3/6 to 4/6, special 5/-, inland 4/6 to 5/-; Counts 188 to 198, local 4/- to 4/6, special 5/-, inland 4/6 to 5/-; Smaller. Local 3/6 to 4/-, special 4/-, inland 4/- to 4/6. Pera Bore, 12/- to 17/- per bushel. Inland two-bushel crates, 9/- to 12/- S. Aust., 8/- to 14/- per bushel.

Other Oranges: N.S.W., 2/- to 3/- per bushel.

Mandarins: N.S.W., Emperor, 3/6 to 6/-, inferior fruit lower, per bushel.

Passion Fruit: N.S.W., 2/6 to 8/-, special to 10/- per half bushel.

Papaws: Q'land., 8/- to 12/-, few higher per tropical case.

Pineapples: Q'land., 7/- to 9/-, few higher per tropical case.

Strawberries: Q'land., 3/- to 5/- per tray; 6/- to 12/- per dozen boxes.

Tomatoes: Q'land., green, 5/- to 7/-, colored 9/- to 11/- per half case. N.S.W., glasshouse, 12/- to 17/-; open air to 10/- per half case. Repacked, 9/- to 13/- per half case.



NAILING MACHINES

**Smooth in Operation
and of Proved
Reliability.**

Illustration shows our latest model 6 track machine. An economical unit for making up, including centre board nailing.

**D. W. BINGHAM & CO.
PTY. LTD.**

Manufacturers of
Modern Machinery of guaranteed workmanship
and performance.

Address: 224-226 Normanby Road, South Melb.
Tel.: MX 2693-MX 1351. Telegrams: Bingmach, Melb.

The Port of HULL

... IS ...

THE FRUIT CENTRE

Serving a Population of Over 13,000,000
in the North and Midlands.

REGULAR SAILINGS TO CONTINENTAL PORTS provide unrivalled
MARKETS for re-export of EMPIRE FRUIT.

Specially Constructed REFRIGERATOR VANS carry FRUIT direct from
STEAMER to inland destinations by EXPRESS TRAINS.

RAPID HANDLING, QUICK DESPATCH, LOW CHARGES, and
THE BEST PRICES. SEND YOUR FRUIT TO HULL.

TEN MODERN DOCKS entirely owned and managed by

THE LONDON AND NORTH EASTERN RAILWAY

Full information and literature supplied on application—

BURNS, PHILP & CO. LTD.,

7 Bridge Street, Sydney. 312 Collins Street, Melbourne; and Branches.

Established 1899.

MARGETSON & CO. LTD.

Fruit Importers and Salesmen

L O N D O N A N D L I V E R P O O L

30 JAMES STREET,
COVENT GARDEN,
W.C.2.
Tel. Add. "FRUTERO"
LONDON.

SHIPPING NOS.:
431, 432, 557
and 872.

37 VICTORIA STREET,
LIVERPOOL, 1.
Tel. Add. "MARGETSON"
LIVERPOOL.

Herbert Wilson Pty. Ltd.

WHOLESALE FRUIT MERCHANTS
AND COMMISSION AGENTS

Nos. 1 and 10, Wholesale Fruit Market, Melbourne.

Accredited Agents for Victorian Central Citrus Association
and Affiliated Association.

City Telephone: F 6444.

Private Phone: M 3055.

Bankers: National Bank of Australasia (Western Branch), Melb.

VICTORIA.

Melbourne (2/8/38): Trading still lacks animation, and business is small. Bananas, Celery, Grapefruit and Lemons are cheaper, but Mandarins are a shade firmer. The following rates are quoted by the Victorian Wholesale Fruit Merchants' Association:—Per Case: Apples, eating, 4/- to 8/-, choice higher; cooking, 2/6 to 5/-, choice higher. Bananas, per double case, green, 8/- to 14/-. Celery, 8/- to 11/-, special higher. Grapefruit, 4/- to 8/-, choice higher. Lemons 4/- to 7/-, special higher. Mandarins, 5/- to 10/-, choice higher. Oranges, 4/- to 8/-, few higher. Passionfruit, half case, 7/- to 10/-, choice higher. Papaws, 10/- to 14/-, few higher. Pineapples, 7/- to 9/-, choice higher. Pears, 4/- to 8/-, few higher. Tomatoes, West Australian, half case, 5/- to 7/-, choice higher.

The Melbourne market manager of the Federal Citrus Council of Australia reports sales as follow:—Navel Oranges: Average standard, 75-84, 4/- to 4/6; 96's up, from 5/-, some 5/6; few good standards, to 6/-; selected standards, 5/- to 8/-; specially selected wrapped, 5/6 to 9/-. Lemons: Average standards, 180-225, to 6/-, best counts, good standards, to 6/6, a few 7/-; selected, 8/-, best counts, few 9/-. Grapefruit: Average standards slow, to 5/-, best counts; good standards, to 6/-; selected, to 7/-, a few 8/-; specially selected, 8/- and 9/-, best counts (60-75), a few higher. Mandarins: Sydney Emperors, 192-225, 7/- to 8/-, a few higher; smalls (400's up), from 4/-; special river Emperors, to 10/-, best counts, a few higher; good reds, 11/-, best counts, a few higher. Commons: Selected standards, 5/- and 6/-, best counts. Poormans' and Sevilles, average standards, to 7/-, for counts 53-75; selected, to 8/-, 96's up, from 4/-.

The Queensland Committee of Direction of Fruit Marketing reports the following prices:—Bananas, 8/- to 14/-, few higher; Cucumbers, 9/- to 11/-. Pineapples, 7/- to 9/-; Papaws, 10/- to 14/-, few higher. Tomatoes, green, 5/-, repacked higher.

QUEENSLAND.

Brisbane: Messrs. W. Arkell & Sons report under date July 25, prices as follow:—Apples: Jon., 8/- to 9/-; Del. and Cleos., 8/- to 10/-; G.S., 9/- to 12/-; S.T.P., 5/- to 7/-; Dem., 5/- to 8/-; F.C. (green), 5/- to 7/-; various, 5/- to 7/-. Pears: W.C., 10/- to 14/-; Giblins, 8/- to 10/-. Oranges: Choice, 4/- to 6/-; Navels, 8/- to 10/-. Lemons, 3/- to 6/-.

Jons., Cleos., Dels., and Grannies, are selling well, other varieties of Apples are slow and agents are having difficulty in making sales. Pears are selling freely. The market is overstocked with citrus.

WESTERN AUSTRALIA.

Perth (30/7/38).—Apples: Dunh's, dumps, 5/- to 8/- (fancy), 7/6 to 9/- (ex. fancy); R. Beauty, 5/- (plain), 5/- to 8/-, to 8/6; Yates, 5/6 to 8/-, 7/- to 11/-, 9/6 to 12/3; G. Smith, 6/- to 8/-, 7/6 to 11/-, 9/6 to 12/-; Cleo., 5/-, 6/- to 8/-, 7/- to 9/-; Nickajack, 5/- to 7/6 (fancy); Doherty, 5/- to 8/- (fancy), 8/6 (ex. fancy); Del., 9/- to 10/- (fancy), 10/6 (ex. fancy); Statesman, 5/-, 6/- to 8/-, 8/6; Rokewood, 5/- to 6/- (fancy), 7/- (ex. fancy); Citrus: Oranges, Navel, flats 2/- to 6/6; dumps, 4/- to 8/6; Joffa, flats, 3/- to 4/-; Lemons, flats, 1/- to 4/- (special to 6/-); Mandarins, flats, 2/- to 8/6; Grapefruit, flats, 5/- to 8/-; other lines: Tomatoes, flats, ex. Geraldton, 3/6 to 14/6; Pears, Keiffer, flats, 5/-; dumps, 6/- to 10/-.

SOUTH AUSTRALIA.

Adelaide (29/7/38).—Apples: Del. (ex cool store), 8/- case; G. Smith (ex cool store), 7/-; Jon. (ex cool store), 6/-; Cleos. (ex cool store), 5/-; Londons (ex cool store), 5/-; Londons (ex shed), 4/-; Romes (ex cool store), 5/-; Romes (ex shed), 4/-; Bananas, 20/- to 22/-; Lemons, 4/-; Oranges (Common), 4/-; Mandarins, 6/- to 8/-; Navels, 5/- to 6/-; Poorman, 5/-; Grapefruit, 6/-; Passionfruit, 16/- half case; Pears (eating), 9/-; Pineapples, 15/-; cases extra.

NEW ZEALAND.

Dunedin (21/7/38): Messrs. Reilly's Central Produce Mart report as follows:—During the week business has been quiet, with the demand confined principally to fresh vegetables. Heavy supplies of Apples still continue to arrive, with values on the low side. The demand is for best quality lines, lower grade fruit being difficult to dispose of. Dessert Pears have a good enquiry at increased values.

The shipment of South Australian Oranges on the "Waitaki" is meeting with steady sales. Sufficient supplies are available until the next arrival of the "Waitaki" about August 2.

Increased supplies of Marmalade Oranges have been coming to hand, and values are lower. N.Z. grown Lemons are in good supply. Unfortunately, some of the lines arriving are in rather wasty condition. Cal. Lemons are short of the enquiry, and are realising high values.

Prices (per case): Cal. Lemons, 70/-; N.Z. Lemons, 8/6 to 12/-; Sth. Aust. Navels, 14/- to 21/-; Poorman Oranges, 10/- to 12/-; Mandarins, 22/6; Qld. Pineapples, 18/- to 20/-; Bananas, ripe, 17/6; Apples: Jons., choice, 6/- to 8/-; Del. 4/- to 8/-; G.S. 6/- to 7/-; Cleo. 6/- to 7/6; Sturmers 4/6 to 8/-; Cooking Apples 3/6 to 5/6; W.N. 8/- to 10/6, P. Barry, 6/6.

Victorian Fruit Marketing Association

A MEETING of the executive of the Victorian Fruit Marketing Association was held at the C.T.A., Melbourne, on July 29.

There were present:—Messrs. G. W. Brown (Chairman), W. H. Carne (Vice-President), J. B. Mills, F. Moore, F. R. Mellor, C. H. Jost, S. Brown, W. P. Hutchinson, Russell (Junior), N. Perry, H. J. Noonan, F. Cave, R. A. W. Bailey, H. M. McLean, K. V. Eagle, J. J. Tully, G. H. Sprague, J. M. Ward (Spt. of Horticulture), F. Petty (Cool Stores' Ass.), E. Noonan (Southern Vic. Fruitgrowers' Ass.), W. H. Barnes (Somerville), and the Secretary, R. E. Boardman.

Proposed Export Control.

The Department of Commerce notified that owing principally to Tasmanian objections, the proposed Bill had been deferred for the present.

It was decided to reaffirm the resolution favoring triennial review of the Bill by growers' Associations, and to inform the Acting Minister of Commerce that unless clause vesting this power in the Agricultural Council were withdrawn the Bill would be opposed.

Sale of Fruit By Count.

The Cool Stores' Association wrote requesting increased activity to secure regulations for sale of large fruits (Apples, Pears and Peaches) by count instead of by weight. It was decided that the various fruitgrowers' organisations, together with the retail trade and representatives of consumers, approach the Government to bring about this reform.

Fruit Drinks.

Dr. T. H. Harrison, Fruit Research Officer of the Department of Commerce stationed in London, reported there had been an enormous increase in the consumption of pure fruit drinks in Europe. Details were furnished concerning the process of manufacture.

Pakenham Field Day.

It was decided to hold a field day at the orchard of Mr. J. J. Ahern, Pakenham, on August 12, for demonstrations in pruning and top working.

Apple Publicity.

At the instance of Messrs. J. J. Tully (Doncaster) and J. B. Mills (Chairman, Australian Apple and Pear Council) a hearty vote of thanks was carried to helpers at Apple Week for their successful effort. Mr. Mills quoted numerous instances of the increased consumption of Apples.

It was decided to provide Apples for 100,000 State School scholars during Health Week—August 15-20. It was reported that the Health Week Committee was arranging for doctors, dentists and public men to speak to the children on physical fitness, emphasising the reports of nutrition committees on the value of the increased use of Apples in the daily diet.

TASMANIA

Leading Australian Firm of Fresh Fruit Exporters. Manufacturers IXL Jam and Canned Fruits.

Hop Factors—Largest Cool Stores for Hop Storage in Commonwealth. All Orchard Supplies available at all times.

Agents for—Associated Evaporated Apple Manufacturers, Eagle, Star & British Dominions Insurance Co. Ltd., Federal Steam Navigation Co. Ltd., Scottish Shire Line of Steamers, Osake Shosen, Kalsha, Blue Star Line Ltd.

Correspondence Invited.

H. JONES & CO. PTY. LTD
Hobart.

The PRINCIPAL Fruit Merchants and Exporters of SOUTH AUSTRALIA

SILBERT, SHARP & BISHOP LTD.

FRUIT MERCHANTS — EXPORTERS — COMMISSION SALESMEN
BANANA IMPORTERS AND RIPENERS

283 Rundle Street — Fruit Exchange — Adelaide

Distributors

Cables & Telegrams:
SILBTSHARP, Adelaide.

All Gardeners' Requirements.
Implements, Manures, Sprays.
Seedsmen & Potato Merchants.

TELEPHONES:
5754-55.

Earle S. Caldicott

FRESH FRUIT SPECIALIST,
INTERSTATE REPRESENTATIVE,
IMPORTER, EXPORTER & COMMISSION AGENT

New Market, Adelaide

Phone: C 2882; After Hours: L 5395.

Growers! Consign your Fruit To

H. C. Austin

Wholesale Fruit and Produce Merchant, General
Exporter, Commission Agent, Shipping Provider.

Specialty Overseas Export All Countries.

New Market, Union St., Adelaide

Phone C 748. G.P.O. Box 722. Telegrams: Austin Fruit.

S. E. Norsworthy & Co.

Gumeracha

FRUIT EXPORTERS AND MERCHANTS

Specialising in Apple and Pear Export.

Proprietors HOME SERVICE STORES, Branch 41.

Phone: Gumeracha 2.

Enquiries Are Invited by Advertisers on
This Page for Fruit for Export or Sale on
The Adelaide Market.

Poultry Notes

THE INFERTILE EGG.

INFERTILE EGGS are sometimes the fault of the hen, and it is a good idea to mark the eggs collected from breeding pens, so that they can be traced back to the bird or birds that laid them. Any hen that is found to be a regular or frequent offender can then be removed from the breeding pen.

If the infertile eggs are being laid by all or most of the birds, then either the cockerel is to blame or too many are being mated to one bird. In restricted runs, eight or ten hens to one cockerel are quite enough, though on free range, a larger number may be satisfactory, provided the cockerel is well-grown and vigorous.

Cockerels in breeding pens need watching, because some are so gallant that they do not take enough food, and in that case they need feeding separately or they will soon fail to make a proportion of the eggs fertile.

Breeding birds must have plenty of fresh green food, and, of course, oyster shell grit must always be available.

CROOKED BREASTS.

Three Breeds Tested.

German investigators, using 1,469 chickens of three breeds—White Leghorns, Brown Leghorns, and Light Sussex—examined the breasts at intervals from 14 days to six months of age. They found that crooked breasts began to show up clearly at seven to eight weeks old. The crookedness seemed to be mostly associated with the period when the intensity of growth was greatest.

The proportion of crooked breasts was much the same for the three breeds. Early hatched chicks gave the highest proportion, chicks hatched at the normal time the lowest, while late hatched chicks were intermediate.

Cockerels gave more and worse crooked breasts than pullets. Early roosting favored the trouble where the tendency was present.

CLEAN NESTS HELP EGG QUALITY.

Poultry Expert's Advice.

That egg quality is assisted by providing clean nests for the layers is claimed by Mr. P. Rumball, the Poultry Expert of the Queensland Department of Agriculture.

The well-fed hen produces an egg of maximum food value, and it rests with the farmer to maintain this quality in order to obtain the maximum money value.

Quality and size govern price, quality being the more important. Lack of size is something easily determined, and by using for breeding only birds that lay large eggs, small eggs can almost be eliminated from the market.

Cleanliness of shell is the first essential for the satisfactory marketing of eggs. There is only one degree of cleanliness, although there are several degrees of dirtiness. Cleanliness can be maintained by providing the stock with nests in which clean litter or nesting material is kept, and by gathering the eggs at least twice a day.

Water is usually used for cleaning. It should be changed from time to time, and the cloth used rinsed at frequent intervals. Before the eggs are packed they should be dried off thoroughly to prevent deterioration.

SALT.

Can be Overdone.

The use of common salt (sodium chloride) is necessary in some form or other for all living creatures. It is the quantity that should be taken that worries some poultrymen. Vegetables, grasses, etc., are commonly thought to contain all the salt that fowls require, but this is not so. Salt is recognised as one of the most important constituents of mineral matter.

Its main uses include an important addition to the food ration and its deficiency leads to general debility, anaemia and a tendency to dropsical conditions. It is also a good application to the soil against eggs of intestinal parasites.

The dose generally advised is 1 per cent., or 1 lb. salt to 100 lb. of mash, whilst for the land a solution of half ton salt to the acre is recommended. Care should be taken, however, that too much salt be not given, as 2 lbs. to 100 lbs. mash is too much, and if 1 lb. is adhered to it should be satisfactory.

INFERTILE HENS.

Some Responsible Conditions.

Fertility is not inherited, and because a sire and dam together give 85 per cent. fertility, it is no criterion that their progeny will follow suit. Nor is fertility correlated with hatchability, and a bird may give only 30 per cent. fertility but 100 per cent. hatchability of fertile eggs, says a writer in "Feathered World."

Fertility, however, does behave as a constant factor in the life of an individual bird, and much of the infertility is due to a few individual females. Thus, if measures can be adopted, such as trapnesting in the first two weeks of the breeding season and the offending birds detected and removed, much of the subsequent infertility may be avoided.

The old farmer was intently studying a picture labelled "The Fall," on show in an art gallery. "What do you think of it?" someone asked.

"I think no great things of it," he answered, dourly. "Why, Eve is tempting Adam with an Apple that wasn't known till about 20 years ago."

The Pig Pen

FEEDING SOWS IN WINTER.

Roots and Skim Milk.

THE feeding of brood sows, particularly during the Winter months, is of extreme importance for the production of good litters in the following Spring. If a sow has suckled a large litter the previous Autumn she will have lost probably 30 lb. of body-weight in her eight weeks' suckling period. This loss of condition will take place even if she has been well fed until weaning.

It is a common practice to turn the sow out to graze in a cow paddock after weaning with pasture as the only source of feed. If roots are being fed to the dairy herd the sow may also get a few of these.

Under such conditions a sow has no opportunity of regaining her condition and building up body reserves for the production of the next litter. The sow, unlike the sheep or cow, has no store period, and the quantity and quality of pasture during Winter is quite insufficient for the production needs.

The problem is easily overcome by growing small areas of root crops and by feeding them with a protein-rich meal or a small quantity of skim-milk. Roots are deficient in protein, the supply of which is so necessary to the sow for the production of healthy litters.

The best form of protein is skim-milk or meat-meal, and a sow should receive 2 or 3 gallons of the former or 1½ lb. of the latter per day. With these quantities should be fed as many Carrots, Pumpkins, or roots as the sow will consume.

Sows will consume about 30 lb. or 40 lb. of roots a day without any ill effect, providing meal or skim-milk are also fed. Roots are bulky and should be fed in small quantities to begin with and gradually increased.

About five or six weeks before the sow is due to farrow the ration of bulky roots should be reduced and replaced by 4 gallons or 5 gallons of skim-milk and meals. This will be the final preparation of the sow heavily in pig in the period during which the young are developing rapidly. An adequate ration over this period is essential if the sow is to produce and rear a good healthy litter.—C. E. Ballinger, in "N.Z. Journal of Agriculture."

PIGS AND VITAMINS.

VITAMIN A is essential for growth and D for bone formation, says a writer in "Ballarat Courier." Adequate amounts of these vitamins should be provided in the food. Brood sows fed alone on skim milk may fail to come in season or may not breed at all.

Liberal amounts of Vitamin A are present in fresh green pasture, so that if pigs are allowed access to such pastures an important step in a campaign for disease prevention will have been taken. If it is not possible to run pigs on pasture, then fresh greenstuff (or bright lucerne hay) must be cut and given wherever possible, if the health of pigs is to be safeguarded. Yellow maize also supplies Vitamin A; but even when this is being fed greenstuff is probably still required for best results.

Vitamin D is supplied by the unobscured action of the sun's rays on certain substances in the pig's skin. There is ordinarily, therefore, no need to anticipate deficiency of this vitamin. There are periods of the year when very little direct sunlight is in evidence for lengthy periods. In such cases cod liver oil (8/6 to 9/- gallon), which is rich in Vitamin D, could with decided advantage be given in the milk (2 oz., or 4 tablespoons per gallon), more especially to young pigs being creep fed and for four weeks following weaning. Brood sows deprived of grass should be given up to 3 oz. daily. A good sample of this oil is also rich in Vitamin A, hence its inclusion in the ration will have a double advantage.

HOW MUCH WATER DO SOWS DRINK?

From results published in the "Farmer and Stockbreeder" (England), it is learned that over a period of two years the water consumption of thirty-seven large white sows, tethered on grass, was measured. There was considerable individual variation, but the average rate during the suckling period was 4½ gallons per head per day. This was about half a gallon more per day than in the week before farrowing. The seasonal difference was slight, and the correlation of water consumption with rainfall and weight of litter at weaning was not significant.

SPECIAL NOTICE TO FRUITGROWERS

In response to numerous requests from growers for information as to who are members of the

**All Members
under
Fidelity Bond**

Wholesale Fruit Merchants' Association of Victoria
the following list is given. All are members of the above Association, and are registered firms carrying on business in the

WHOLESALE FRUIT MARKET, MELBOURNE.

STAND NUMBERS ARE AS INDICATED IN PARENTHESES.

T. STOTT & SONS (26).
H. L. E. LOVETT & CO. (23).
A. E. PITT (14).
J. DAVIS PTY. LTD. (8).
W. S. TONG (31).
SILK BROS. PTY. LTD. (24-25).
J. G. MUMFORD (35).
GOLDEN VALLEY FRUIT CO. PTY. LTD. (15).
J. W. ROSS (13).
H. M. WADE & CO. (21).
DAVID SMITH PTY. LTD. (3).
SILBERT SHARP & DAVIES PTY. LTD. (17).
WATKINS FRUIT COMPANY PTY. LTD (5)
P. A. PATRIKEOS (36).

G. WOOLF & SONS (29-30).
R. CORNISH & SONS (5).
J. HYMAN & SON (51).
HERBERT WILSON PTY. LTD. (10).
FRANK BOOTH & SONS PTY. LTD. (16).
GEO. LISTER PTY. LTD. (12).
TIM YOUNG & CO. PTY. LTD. (18).
F. W. VEAR PTY. LTD. (28).
YEE HOP LOONG & CO. (32).
H. LOUEY PANG & CO. PTY. LTD. (4).
WING YOUNG & CO. (38).
D. MENTIPLAY & CO. PTY. LTD. (27).
PRICE & KING PTY. LTD. (2).
REGAN & KENNY (Successors to Wm. Sweeney). (33).

Correspondence is invited by the Association.

Office : 21 Wholesale Fruit Market,
Queen Street, Melbourne. Phone F 4866.

Some Useful Orchard Notes

What Work Should be Done

IN REVIEWING the many "jobs" of the orchardist at this season of the year, Mr. J. L. Proven, B.Ag.Sc., Senior Horticultural Instructor, Department of Agriculture, Victoria, gives some valuable pointers thus:—

Planting of young trees should be completed quickly in order that they may be well established before root growth commences.

Last season, Red Spider was very troublesome on Apples, Pears, Prunes, Plums and Almonds. Where this pest occurred, an examination around the leaf buds and fruit spurs will reveal large numbers of eggs. To destroy these eggs, spray thoroughly with lime sulphur 1 in 10, paying particular attention to the underside of spurs and laterals. Where San José, Brown or Black Scale is present in addition to the Red Spider, a combined spray of 2 gallons of Winter white oil, and 5 gallons of lime sul-

phur made up to 80 gallons with water will be found very effective.

The application of tar distillate sprays, for the control of Green Peach Aphid, should now be completed. If applied late, damage to the developing buds will result. The eggs of the Green Peach Aphid are hidden behind the buds and are readily destroyed by a thorough spray application of 3:100 tar distillate.

Headlands and channel banks should be cleaned of weeds, etc., which might act as hosts for the insect. Growers who intend to use this spray for the first time are warned about its effect on the skin. Goggles should be worn to protect the eyes, and castor oil spread over the exposed skin.

Do not rely on Summer cover sprays to completely control Brown Rot of Apricots, Peaches, Plums and Cherries. The control of this disease should commence now with the collection and burning of all mummified

fruits and diseased twigs on the trees.

Some of the mummified fruits may have dropped to the soil already, and if these are left undisturbed they will provide a source of infection. To overcome this the small strips of land between and around the tree trunks should be well cultivated.

Orders for commercial fertilisers should be forwarded so that applications can be completed before the end of August. For early flowering trees such as the Almond, Nectarine, Apricot and some early blossoming Peaches, the quick-acting type of fertiliser, e.g., sulphate of ammonia, should be applied and ploughed under by the first week in August. The setting of Almonds and stone fruits is assisted by applications of readily available nitrogenous fertilisers.

Passionfruit growers will be interested in a new, half-bushel case for local and interstate markets. The dimensions are 18 in. x 5½ in. x 11½ in., and the various "packs" have been worked out in equal dozens, e.g., 15, 16, 17 dozen, and so on, per case. This development it is hoped will assist both the producer and the buyer. Copies of the chart will be available in the near future.

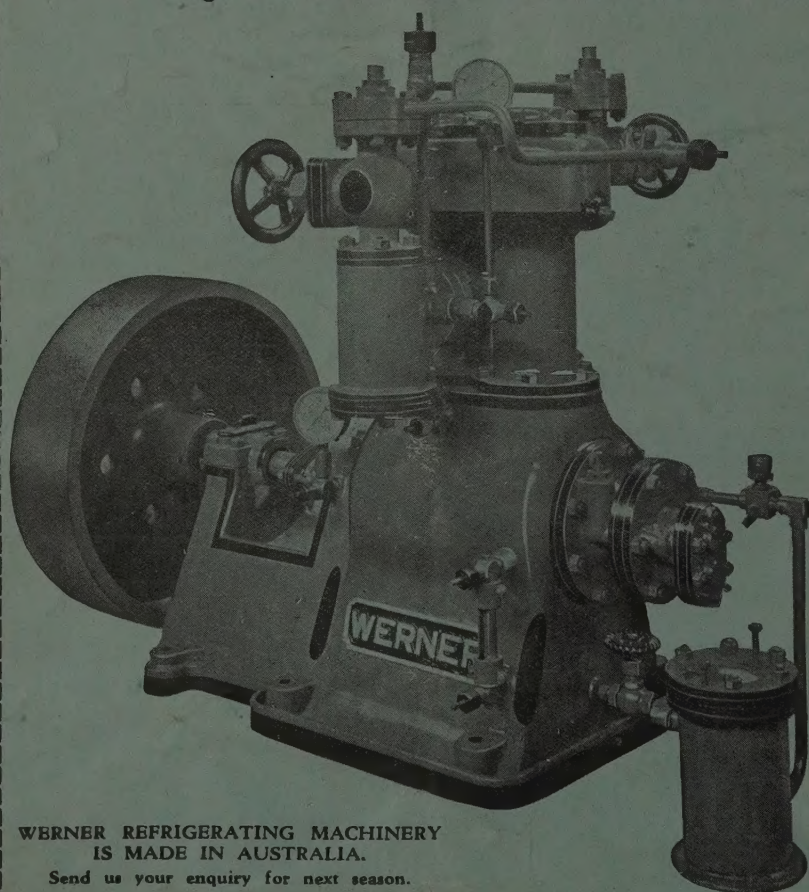
In the cooler and wetter Apple districts of the State, growers have reported that in the early Spring the parasite—Aphelinus mali—does not control Woolly Aphid sufficiently. Under these conditions the Aphid causes damage to the trees. As the Summer advances the parasite becomes more active and the control is better. In such areas growers are advised to adopt the Winter spray programme for the control of this pest. This consists of red oil 1 in 15.

Orchard heating, by means of briquette or oil burners, is becoming more popular amongst growers who are in frosty localities and who grow fruit trees and vines liable to frost injury.

Results of recent research work in the cool storage of Plums and Peaches have shown that many varieties of these fruits can be successfully stored for longer periods than was once thought possible. Some varieties of Plums can be stored for a period of eleven weeks, while Lawford's Gage (probably synonymous with Cole's Golden Gage) can be held for sixteen weeks. Smith's Catherine Ann, and Late Crawford Peaches can be stored for two months.

"WERNER" PLANTS Refrigerate Over 1½ Million Cases of Fruit in over 60 Stores throughout the Commonwealth

We design and Install Plants to Store from 500 Cases upwards



Enclosed Type
Ammonia
Compressor
Suitable for
Full
Automatic
Control

Direct
Expansion
or
Brine
Circulation

Type of
Compressor made
by Werner from
10-ton
upwards.

WERNER REFRIGERATING MACHINERY
IS MADE IN AUSTRALIA.
Send us your enquiry for next season.

R. WERNER & CO. PTY. LTD.

Refrigerating Engineers

54-86 BURNLEY STREET, - - RICHMOND

Phones: J 1161 (6 lines)

CITY SHOW ROOM: 610 LITTLE COLLINS STREET, MELBOURNE. Phone: MU 6275

AGENTS:—

N.S.W.:

R. J. LINDSAY.

99 Kippax St., Sydney

S.A.:

W. J. WHITE,

3 Trevelyn Street, Wayville

W.A.:

ATKINS (W.A.) LTD.

894 Hay Street.

Windbreaks for Orchards

How to Plant Them.

THE ADVANTAGES derived from shelter belts (windbreaks) where orchards are exposed to strong winds are not always fully realised, though more are being planted each year. Not only is the loss from windfalls very great in orchards exposed to strong winds, but the growth and general health of the trees is adversely affected. It is not uncommon under such conditions to find the bulk of the crop of fruit carried on the sheltered side of the trees, on which side the wood growth also is stronger, states the "N.S.W. Agriculture Notes."

Fear is often entertained that the trees adjacent to the windbreak will be robbed of plant-food and moisture, but this need not be the case, as is evidenced by the fact that these trees are sometimes the best in the orchard.

What variety of tree to plant as a windbreak requires careful consideration as the trees chosen must fulfil certain requirements. They must make fairly rapid growth and reach a height and produce foliage of sufficient density to serve the desired purpose. The object of a windbreak is not absolutely to block the wind, as if this were done the wind passing over the top of the break would tend to at once drop or dip and strike the trees two or three rows back in the orchard. What is required is a break that will sufficiently slow down the speed of the wind that passes through it as to render it harmless.

Another important requirement is that the trees of which it is formed shall not be subject to attack by scale or other pests to which fruit trees are subject. The cost of the young trees also should not be too high. Probably Pinus insignis fulfils these requirements better than any other tree.

The windbreak should not be planted too close to the orchard: a distance of 30 feet or more is advisable. If sufficient land is available, a double row of trees, those in the second row being planted opposite the centres of the spaces in the first, is to be preferred to a single one. Where a double row is planted, the distance between the trees in the row can be increased: Rows 10 to 15 feet apart, with the trees 20 feet apart, will usually be found satisfactory. By keeping an open drain 5 or 6 feet from the windbreak its roots are prevented from robbing the orchard trees of plant-food and moisture.